No. 200400294

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Subeam Extract Co.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE , OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. IN THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS SPECIFIED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT, COMMON

'Daisy'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of Washington, D.C. this eleventh day of March, in the year two thousand and five.*

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

Form Approved - OMB No. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE
(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER
Sunbeam Extract Co.

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME
SE 931065-R

3. VARIETY NAME
DAISY

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)*
500 Danberry Dr.
Wooster, OH, 44691

5. TELEPHONE *(Include area code)*
330-264-4155

6. FAX *(Include area code)*
330-264-1566

FOR OFFICIAL USE ONLY

PVPO NUMBER
200400294

FILING DATE
August 12, 2004

7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION *(corporation, partnership, association, etc.)*
Corporation

8. IF INCORPORATED, GIVE STATE OF INCORPORATION
OHIO

9. DATE OF INCORPORATION
1992

10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. *(First person listed will receive all papers)*
DR. H. N. Lafever
500 Danberry Dr.
Wooster, OH, 44691

FEES RECEIVED

FILING AND EXAMINATION FEES:
$ 3652.00
DATE 8/12/2004

CERTIFICATION FEE:
$ 432.00
DATE 9/09/2004

11. TELEPHONE *(Include area code)*
330-264-4155
Cell: 330-465-0477

12. FAX *(Include area code)*
330-264-1566

13. E-MAIL
HNLAFEVER@AOL.COM

14. CROP KIND *(Common Name)*
Soft Red Winter Wheat

15. GENUS AND SPECIES NAME OF CROP
Triticum aestivum

16. FAMILY NAME *(Botanical)*
Graminae

17. IS THE VARIETY A FIRST GENERATION HYBRID?
☐ YES ☒ NO

18. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow Instructions on reverse)
- a. ☒ Exhibit A. Origin and Breeding History of the Variety
- b. ☒ Exhibit B. Statement of Distinctness
- c. ☒ Exhibit C. Objective Description of Variety
- d. ☒ Exhibit D. Additional Description of the Variety *(Optional)*
- e. ☒ Exhibit E. Statement of the Basis of the Owner's Ownership
- f. ☒ Voucher Sample *(2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository)*
- g. ☒ Filing and Examination Fee ($3,652), made payable to "Treasurer of the United States" *(Mail to the Plant Variety Protection Office)*

19. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? *See Section 83(a) of the Plant Variety Protection Act)*
☒ YES *(If "yes", answer items 20 and 21 below)* ☐ NO *(If "no", go to item 22)*

20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES? ☒ YES ☐ NO
IF YES, WHICH CLASSES? ☒ FOUNDATION ☒ REGISTERED ☒ CERTIFIED

21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? ☐ YES ☒ NO
IF YES, SPECIFY THE NUMBER 1,2,3, etc. FOR EACH CLASS.
☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED
(If additional explanation is necessary, please use the space indicated on the reverse.)

22. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES?
☒ YES ☐ NO
IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. *(Please use space indicated on reverse.)*

23. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT *(PLANT BREEDER'S RIGHT OR PATENT)*?
☐ YES ☒ NO
IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. *(Please use space indicated on reverse.)*

24. The owners declare that a viable sample of basic seed of the variety has been furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Owner(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF OWNER	SIGNATURE OF OWNER
Howard N. Lafever	
NAME *(Please print or type)*	NAME *(Please print or type)*
Howard N. Lafever	
CAPACITY OR TITLE	DATE
Breeder-Owner	Aug. 9, 2004
CAPACITY OR TITLE	DATE

INSTRUCTIONS

2004 00294

GENERAL: To be effectively filed with the Plant Variety Protection Office (PVPO), **ALL** of the following items must be received in the PVPO: (1) Completed application form signed by the owner; (2) completed exhibits A, B, C, E; (3) for a seed reproduced variety at least 2,500 viable untreated seeds, for a hybrid variety at least 2,500 untreated seeds of each line necessary to **reproduce** the variety, or for tuber reproduced varieties verification that a viable *(in the sense t will reproduce an entire plant)* tissue culture will be deposited and maintained in an approved public repository; (4) check drawn on a U.S. bank for $3,652 ($4 filing fee and $3,220 examination fee), payable to "Treasurer of the United States" *(See Section 97.6 of the Regulations and Rules of Practice.)* Partial applica will be held in the PVPO for not more than 90 days, then returned to the applicant as unfiled. Mail application and other requirements to Plant Variety Protectio Office, AMS, USDA, Room 401, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. Retain one copy for your files. All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. **DO NOT** use masking mater to make corrections. If a certificate is allowed, you will be requested to send a check payable to "Treasurer of the United States" in the amount of $432 for issu of the certificate. Certificates will be issued to owner, not licensee or agent.

Plant Variety Protection Office
Telephone: (301) 504-5518
FAX: (301) 504-5291
Homepage: http://www.ams.usda.gov/science/pvpo/pvp.htm

ITEM

18a. Give:
(1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method;
(2) the details of subsequent stages of selection and multiplication;
(3) evidence of uniformity and stability; and
(4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified

18b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:

(1) identify these varieties and state all differences objectively;
(2) attach statistical data for characters expressed numerically and demonstrate that these are clear differences; and
(3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.

18c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.

18d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, *etc.*

18e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.

19. If "Yes" is specified *(seed of this variety be sold by variety name only, as a class of certified seed)*, the applicant **MAY NOT** reverse this affirmative decision after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. *(See Regulations and Rules of Practice, Section 97.103).*

22. *See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.*

23. *See Section 55 of the Act for instructions on claiming the benefit of an earlier filing date.*

21. CONTINUED FROM FRONT *(Please provide a statement as to the limitation and sequence of generations that may be certified.)*

22. CONTINUED FROM FRONT *(Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)*

SEPTEMBER 5, 2003---FIRST DATE OF SALE OF FOUND. SEED TO CERTIFIED GROWERS

23. CONTINUED FROM FRONT *(Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).)*

NOTES: It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. There is no charge for filing a change of address. The fee for filing a change of ownership or assignm or any modification of owner's name is specified in Section 97.175 of the regulations. *(See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.)*

To avoid conflict with other variety names in use, the applicant must check the appropriate recognized authority. For example, for agricultural and vegetable crops, contact: Seed Branch, AMS, USDA, Room 213, Building 306, Beltsville Agricultural Research Center--East, Beltsville, MD 20705. Telephone: (301) 504-8089. http://www.ams.usda.gov/lsg/seed.htm

Exhibit A

Origin and Breeding History of the Variety

1. `Daisy,` (previously originally designated and tested as SE931065R-8, then designated and tested as "Daisy", an experimental designation), originated at the Sunbeam Extract Company from the cross: Catoctin/IN 83179/A1-6-2-4-1. IN 83179A1-6-2-4-1 resulted from the complex cross: Auburn/3/Beau*2// Ciete Cerros/Arthur/5/Compton/4/Caldwell/3/Benhur//Knox/LaPorte.

   The variety name `Daisy` was officially accepted on 6/9/2003 by the Seed Regulatory and Testing Branch, AMS, USDA.

   The originating cross was made in 1993. Daisy was selected as a single head from an F3 bulk in 1996 and grown as a head row in 1997. In 1998 it was advanced to a "plant row " nursery in a 3 meter row and was noted as having excellent appearance. In 1999 it was advanced to a single drilled plot nursery (7 rows wide X 3 m. in length=3.26 m. square) Replicated yield trials began in 2000 with statewide and regional trials in 2001, 2002, and 2003. The variety was noted each year as having excellent appearance and high yields. Concurrent with advanced testing, an increase program was initiated in 2000.

2. Breeder seed of Daisy arose from a small increase in 2000 where seed was taken from an F3 derived, F6line in 1999 for seeding of this plot. It was noted as being very pure. Harvested seed from this plot was planted in a large increase plot measuring 4.6 X 68.6 meters (315.6 m. square) for 2001 harvest and rogued carefully several times prior to harvest. An increase of 2.6 acres was produced in 2002 and again rogued carefully several times. In 2003 approximately 70 acres of Breeder seed was produced for distribution to Certified producers in the fall, 2003. Daisy appeared to be very uniform and homozygous during this purification and increase process from 2000 through 2003.

3. Daisy was observed to be uniform and stable in phenotype as evidenced by various agronomic and pathological examinations through the last four years of increase involving the F7-F10 generations.

4. Variants observed during field inspections of Daisy increases appeared to be relatively few in number and of four main types, i.e., tall blue green, blue green, awned, and tall blue green awned; typical of a self-pollinated crop breeding program with selections made in the F3 generation. The overall average percent of off types observed was .195%, thus, we shall hereby describe the variety as having up to .5% allowable off-types.

5. This cultivar was selected for release due to its high yielding ability, excellent straw strength, excellent milling and baking quality, and excellent appearance.

Exhibit B (revised 8/21/04)

Statement of Distinctness

'Daisy' is an apically awnletted, lt.tan-chaffed cultivar with a dark green plant color at boot stage. Daisy's phenol reaction is brown. At heading Daisy exhibits yellowish-green heads slightly smaller than comparative popular varieties, but more numerous. This yellowish-green color of the heads is a distinctive trait among today's popular varieties. Daisy's stems are hollow with usually 4 nodes and exhibit a waxy bloom.

Spikes of Daisy are erect to inclined at early maturity trending towards inclined at late maturity. Spikes are tapering to strap in shape and middense, averaging 8.0 cm. In length and 11 mm. in width. The last rachis internode is glabrous. Glumes are tan at maturity; yellow-green prior to ripening, medium to long in length and medium in width. Glumes are glabrous with obtuse beaks and oblique shoulders.

Kernels are ovate in shape with rounded cheeks. The crease is narrow and shallow. The brush is medium and not collared. Kernels average 6.6 mm. in length and 3.3 mm. in width. Seed wt. per 1000 seeds averaged 39.1 grams on 10 samples from various sources.

Daisy does not closely resemble any currently grown varieties we have observed in our nurseries in that it has a distinctive yellow -green appearance at heading and until the beginning of ripening. The variety is a very short variety, slightly earlier than midseason in heading and maturity. Daisy has exhibited extremely stiff straw, being the only variety still standing at harvest in two of the past four years in extremely high fertility tests. Daisy has also exhibited excellent milling and baking quality. (See attached data from the USDA Soft Wheat Quality Laboratory at Wooster, Ohio.)

While Daisy does not closely resemble currently grown varieties, it is most similar (most closely resembles) to Hopewell, a similar variety in several respects, however, Hopewell is dark green in head color at heading and is brown(red) chaffed at maturity (Daisy is yellow-green at heading and lt. tan-chaffed at maturity), is often later in heading date by 1-2 days, is 1-2 inches taller, and its auricles possess anthocyanin while Daisy's auricles do not. Hopewell's phenol reaction is "dark brown", while Daisy's is brown. (See attached report.) Additionally, Daisy possesses the H7 and H8 genes for resistance to Hessian fly (*Mayetiola destructor*) biotypes E, M, N, and O while Hopewell possesses no known genes for Hessian fly resistance.

Daisy has an excellent yield record in tests conducted by ourselves and other private testers. (See attached data.)

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MD 20705

EXHIBIT C
(Wheat)

OBJECTIVE DESCRIPTION OF VARIETY
WHEAT (*Triticum* spp.)

NAME OF APPLICANT(S)
SUNBEAM EXTRACT CO.

ADDRESS (Street and No. or RD No., City, State, and Zip Code)
500 DANBERRY DR.
WOOSTER, OH, 44691

FOR OFFICIAL USE ONLY

PVPO NUMBER
200400294

VARIETY NAME
DAISY

TEMPORARY OR EXPERIMENTAL DESIGNATION
SE 931065-R

PLEASE READ ALL INSTRUCTIONS CAREFULLY: Place the appropriate number that describes the varietal character of this variety in the boxes below. Place a zero in the first box (e.g. [0][9][9] or [0][9]) when number is either 99 or less or 9 or less respectively. Data for quantitative plant characters should be based on a minimum of 100 plants. Comparative data should be determined from varieties entered in the same trial. Royal Horticultural Society or any recognized color standard may be used to determine plant colors; designate system used: _____

Please answer all questions for your variety; lack of response may delay progress of your application.

1. KIND:

[1]
1=Common
2=Durum
3=Club
4=Other (SPECIFY) : _____

2. VERNALIZATION:

[2]
1=Spring
2=Winter
3=Other (SPECIFY) : _____

3. COLEOPTILE ANTHOCYANIN:

[1] 1 = Absent 2 = Present

4. JUVENILE PLANT GROWTH:

[1] 1 = Prostrate 2 = Semi-erect 3 = Erect

5. PLANT COLOR (boot stage):

[2]
1 = Yellow-Green
2 = Green
3 = Blue-Green

6. FLAG LEAF (boot stage):

[2] 1 = Erect 2 = Recurved

[2] 1 = Not Twisted 2 = Twisted

[1] 1 = Wax Absent 2 = Wax Present

7. EAR EMERGENCE:

[2][3][4] Number of Days (Average)

[0][2] Number of Days Earlier Than Hopewell *

Same as _____ *

[ ][ ] Number of Days Later Than _____ *

* Relative to a PVPO-Approved Commercial Variety Grown in the Same Trial

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8. ANTHER COLOR:

[1] 1 = Yellow
2 = Purple

9. PLANT HEIGHT (from soil to top of head, excluding awns):

[9][1.4] cm (Average)

[ ][ ] cm Taller Than _____ *

Same as _____ *

[2.5] cm Shorter Than Hopewell *

10. STEM:

A. ANTHOCYANIN

[1] 1= Absent
2 = Present

B. WAXY BLOOM

[1] 1 = Absent
2 = Present

C. HAIRINESS
(last internode of rachis)

[1] 1 = Absent
2 = Present

D. INTERNODE

[1] 1 = Hollow 2 = Semi-solid 3 = Solid

[3-4] Number of Nodes

E. PEDUNCLE

[3] 1 = Erect 2 = Recurved 3 = Semi-erect

[7.8] cm Length

F. AURICLE

[1] Anthocyanin 1 = Absent 2 = Present

[1] Hair 1 = Absent 2 = Present

11. HEAD (at Maturity):

A. DENSITY

[2] 1 = Lax
2 = Middense (Laxidense)
3 = Dense

B. SHAPE

[1-2] 1 = Tapering
2 = Strap
3 = Clavate
4 = Other (SPECIFY): _____

C. CURVATURE

[2] 1 = Erect
2 = Inclined
3 = Recurved

D. AWNEDNESS

[2] 1 = Awnless
2 = Apically Awnletted
3 = Awnletted
4 = Awned

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12. GLUMES (at Maturity):

A. COLOR

[1]
1 = White
2 = Tan
3 = Other (SPECIFY) : _____

B. SHOULDER

[2]
1 = Wanting 2 = Oblique
3 = Rounded 4 = Square
5 = Elevated 6 = Apiculate
7 = Other (SPECIFY): _____

C. SHOULDER WIDTH

[2]
1 = Narrow
2 = Medium
3 = Wide

D. BEAK

[1]
1 = Obtuse
2 = Acute
3 = Acuminate

E. BEAK WIDTH

[2]
1 = Narrow
2 = Medium
3 = Wide

F. GLUME LENGTH

[3]
1 = Short (ca. 7mm)
2 = Medium (ca. 8mm)
3 = Long (ca. 9mm)

G. WIDTH

[2]
1 = Narrow (ca. 3mm)
2 = Medium (ca. 3.5mm)
3 = Wide (ca. 4mm)

13. SEED

A. SHAPE

[1]
1 = Ovate
2 = Oval
3 = Elliptical

B. CHEEK

[1]
1 = Rounded
2 = Angular

C. BRUSH

[2]
1 = Short
2 = Medium
3 = Long

[1]
1 = Not Collared
2 = Collared

D. CREASE

[1]
1 = Width 60% or less of Kernel
2 = Width 80% or less of Kernel
3 = Width Nearly as Wide as Kernel

[1]
1 = Depth 20% or less of Kernel
2 = Depth 35% or less of Kernel
3 = Depth 50% or less of Kernel

E. COLOR

[2]
1 = White
2 = Amber
3 = Red
4 = Other (SPECIFY): _____

F. TEXTURE

[2]
1 = Hard
2 = Soft
3 = Other (SPECIFY): _____

G. PHENOL REACTION (*see instructions*):

[3]
1 = Ivory 4 = Dark Brown
2 = Fawn 5 = Black
3 = Light Brown

H. SEED WEIGHT

[3][9] g/1000 seed (Whole number only)

I. GERM SIZE

[2]
1 = Small
2 = Midsize
3 = Large

14. **Disease :** (0=Not Tested; 1=Susceptible; 2=Resistant; 3=Intermediate; 4=Tolerant)

PLEASE INDICATE THE SPECIFIC RACE OR STRAIN TESTED 200400294

[1]	Stem Rust *(Puccinia graminis* f. sp. *tritici)* Field races	[1]	Leaf Rust *(Puccinia recondita* f. sp. *tritici)* Contains unknown res. genes
[3]	Stripe Rust *(Puccinia striiformis)* Field races	[0]	Loose Smut *(Ustilago tritici)*
[0]	Tan Spot *(Pyrenophora tritici-repentis)*	[0]	Flag Smut *(Urocystis agropyri)*
[0]	Halo Spot *(Selenophoma donacis)*	[0]	Common Bunt *(Tilletia tritici* or *T. laevis)*
[2]	*Septoria nodorum* (Glume Blotch)	[0]	Dwarf Bunt *(Tilletia controversa)*
[0]	*Septoria avenae* (Speckled Leaf Disease)	[0]	Karnal Bunt *(Tilletia indica)*
[2]	*Septoria tritici* (Speckled Leaf Blotch)	[2]	Powdery Mildew *(Erysiphe graminis* f. sp. *tritici)* Field races
[3]	Scab (*Fusarium* spp.)	[0]	"Snow Molds"
[0]	"Black Point" (Kernel Smudge)	[0]	Common Root Rot *(Fusarium, Cochliobolus* and *Bipolaris* spp.)
[1]	Barley Yellow Dwarf Virus (BYDV)	[3]	Rhizoctonia Root Rot *(Rhizoctonia solani)*
[3]	Soilborne Mosaic Virus (SBMV)	[0]	Black Chaff *(Xanthomonas campestris* pv. *translucens)*
[2]	Wheat Yellow (Spindle Streak) Mosaic Virus	[0]	Bacterial Leaf Blight *(Pseudomonas syringae* pv. *syringae)*
[0]	Wheat Streak Mosaic Virus (WSMV)	[ ]	Other (SPECIFY) _____
[ ]	Other (SPECIFY) _____	[ ]	Other (SPECIFY) _____
[ ]	Other (SPECIFY) _____	[ ]	Other (SPECIFY) _____
[ ]	Other (SPECIFY) _____	[ ]	Other (SPECIFY) _____

15. **INSECT:** (0=Not Tested; 1=Susceptible; 2=Resistant; 3=Intermediate; 4=Tolerant)

PLEASE SPECIFY BIOTYPE (where needed)

[2]	Hessian Fly *(Mayetiola destructor)* Biotypes E,M,N,O	[ ]	Other (SPECIFY) _____
[0]	Stem Sawfly *(Cephus* spp.)	[ ]	Other (SPECIFY) _____
[0]	Cereal Leaf Beetle *(Oulema melanopa)*	[ ]	Other (SPECIFY) _____
[0]	Russian Aphid *(Diuraphis noxia)*	[ ]	Other (SPECIFY) _____

15. INSECT: *Continued* (0=Not Tested; 1=Susceptible; 2=Resistant; 3=Intermediate; 4=Tolerant)

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PLEASE SPECIFY BIOTYPE (where needed)

[0] Greenbug *(Schizaphis graminum)*

[ ] Other (SPECIFY) _____

[0] Aphids

[ ] Other (SPECIFY) _____

16. ADDITIONAL INFORMATION ON ANY ITEM ABOVE, OR GENERAL COMMENTS

WHEAT DESCRIPTOR ILLUSTRATIONS

Section numbers correspond to the numbers of the sections on the form.

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4 EARLY PLANT GROWTH HABIT:

1 Prostrate | 2 Intermediate | 3 Erect

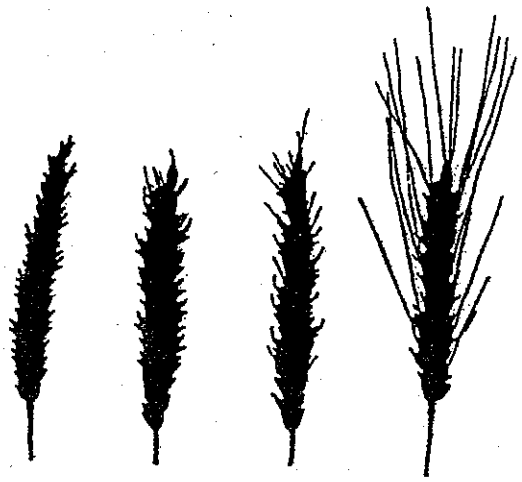
10 STEM INTERNODE X-SECTION

1 Hollow | 2 Semi-Solid | 3 Solid

11 SPIKE SHAPE

1 Tapering | 2 Oblong | 3 Clavate | 4 Elliptical

11 AWNEDNESS:

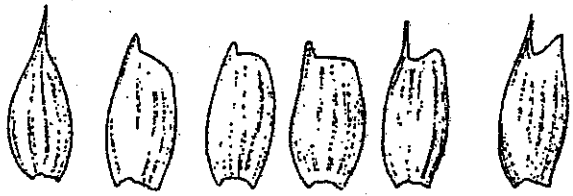


1 Awnless | 2 Apically Awnleted | 3 Awnleted | 4 Awned

12 BEAK SHAPE:

1 Obtuse | 2 Acute | 3 Acuminate

12 SHOULDER SHAPE:



1 Wanting | 2 Oblique | 3 Rounded | 4 Square | 5 Elevated | 6 Apiculate

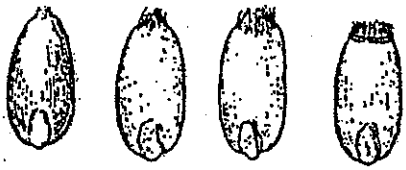
13 SEED SHAPE:

1 Ovate | 2 Oval | 3 Elliptical

13 CHEEK SHAPE:

1 Rounded | 2 Angular

13 BRUSH SIZE:



1 Small | 2 Midsized | 3 Large | Collared

13 BRUSH HAIR LENGTH

1 Short | 2 Medium | 3 Long

GERM (EMBRYO) SIZE:

1 Small | 2 Midsized | 3 Large

13 SEED CREASE WIDTH:

1 Narrow | 2 Mid-Wide | 3 Wide

13 SEED CREASE DEPTH:

1 Shallow | 2 Mid-Deep | 3 Deep

REFERENCE

Briggle, L.W. and L.P. Reitz. 1963. Classification of Triticum Species and of Wheat Varieties Grown in the United States. Technical Bulletin 1278. United States Department of Agriculture.

10

Exhibit D

Additional Description of the Variety

1. Data summaries for Daisy are included with this application for the years 2001, 2002, 2003, and 2004 from performance trials conducted at Wooster, OH. Results of the 2003 and 2004 Ohio Wheat Performance Test (Horticulture and Crop Science Series 228, Ohio State University Extension, Ohio Agricultural Research and Development Center, The Ohio State University) are additionally included.

2. Milling and baking quality data from grain quality analyses conducted by the USDA Soft Wheat Quality Laboratory at Wooster, Ohio on Daisy grown in trials in 2000, 2001, 2002, and 2003 at Wooster, OH are also included with this application.

3. Phenol test results on Daisy as well as PAGE test results are also included with this application.

2001 PRIME YT #1, WOOSTER, OH

SUNBEAM EXTRACT CO.

Var. No.	Variety	Exp. Designation	HD (d after Apr 30)	HT (in.)	ML (0-9)	13-Jun SCAB1 (0-9)	19-Jun SCAB2 (0-9)	SEPT (0-9)	STAG (0-9)	LG (%)	Overall Appearance (0-9)	YIELD (bu/a)	Rank	TW (lbs/bu)	Rank
1	ZORRO		15.8	39.0	0.0	0.5	2.5	3.0	0.5	61.3	3.5	64.1	25	59.7	11
2	Pioneer 25R57		17.8	41.0	0.0	1.0	1.8	2.3	0.0	3.3	7.5	96.2	3	59.5	12
3	VALOR		20.5	42.8	0.0	0.0	0.8	2.5	0.0	68.3	3.5	79.9	18	60.2	6
4	VICAR		18.0	37.8	0.0	0.0	0.8	2.8	0.0	38.8	4.5	82.1	12	61.0	2
5	HOPEWELL		20.0	40.5	0.0	0.0	2.5	3.8	0.0	8.8	6.5	88.9	7	59.5	13
6	VIRGO		18.8	37.8	0.0	2.5	5.0	2.3	0.5	4.5	6.8	89.1	6	57.3	23
7	LISBO		18.5	39.3	0.0	0.0	1.5	2.5	0.0	32.0	5.0	84.4	11	61.4	1
8	ROSCO		18.8	39.3	0.3	0.3	1.5	1.5	1.3	25.0	4.8	78.2	20	57.2	24
9	BRAVO		15.5	39.3	0.0	1.0	1.8	3.8	0.5	21.3	6.3	81.8	13	60.5	3
10	HONEY		18.3	40.3	0.3	0.3	1.5	2.5	0.0	48.8	4.3	71.6	23	58.3	20
11	LASER		13.5	40.3	2.3	0.0	1.3	4.3	1.5	31.5	6.0	85.8	10	58.7	17
12	OSCAR		19.3	40.3	0.0	0.3	1.5	2.3	0.0	55.0	4.8	88.7	8	57.8	22
13	SABER	SE E2-3	19.8	39.5	0.0	0.3	2.3	4.0	0.0	29.0	5.5	74.5	22	60.0	8
14	TIGER	SE851036-5-1	18.5	40.8	0.0	0.3	2.5	5.5	0.5	25.0	5.0	78.7	19	59.4	15
15	TUFFY	SE 861382-18-2	14.8	39.0	0.0	0.3	1.8	5.0	1.0	42.5	4.5	75.3	21	56.1	25
16	Pioneer 25R26		21.0	39.8	0.0	0.0	1.3	1.3	0.0	32.0	5.8	96.7	2	58.4	19
17	HUSKY	SE931115R-6	19.0	38.8	0.0	0.0	1.3	2.0	0.3	2.5	7.0	92.8	4	60.3	4
18	SONIC	SE892089-10	14.5	40.0	0.0	3.3	3.8	4.8	0.0	24.3	5.3	65.2	24	60.3	5
19	JIFFY	SE931034-23	15.0	39.3	0.0	3.3	3.3	3.3	1.3	1.3	7.0	80.5	17	59.5	14
20	DAISY	SE931065R-8	18.5	39.8	0.0	1.5	1.3	2.8	0.0	0.0	7.5	97.5	1	58.7	18
21	GATOR	SE911691-6	18.8	39.0	0.0	0.0	1.8	3.3	0.5	32.0	4.0	81.7	15	60.2	7
22	GOMER	SE921051-4	18.0	35.8	0.0	0.3	2.5	3.3	1.5	20.8	5.5	81.1	16	58.8	16
23	LEROY	SE931034-9	15.5	40.5	0.0	2.3	3.5	2.8	1.0	6.3	7.0	87.8	9	59.8	10
24	HARPO	SE941006-9	18.3	40.5	0.0	1.5	1.5	2.3	0.0	21.3	5.3	81.8	14	59.9	9
25	TOTEM	SE941011R-4	16.8	35.8	1.5	0.3	1.8	3.0	0.8	2.0	7.0	90.6	5	57.9	21
Mean:			17.7	39.4	0.2	0.8	2.0	3.1	0.4	25.5	5.6	83.0		59.2	
LSD.05:			0.7	2.0	0.9	0.8	1.1	1.2	ns	33.4	1.6	10.1		0.7	
CV(%):			3.0	3.6	371.1	75.3	37.9	27.7	196.4	93.0	20.0	8.6		0.6	

Quality Data (2000 Crop Year)

Var. No.	Milling/ Baking Score	Soft. Equiv.	Flour Yield	Flour Prot.	Lactic Acid
1	C / F	42.01	71.98	8.40	89.4
2	--	--	--	--	--
3	A / A	65.03	70.76	6.88	96.7
4	B / D	60.24	69.46	8.09	76.7
5	A / A	66.69	69.49	7.82	106.5
6	C / B	62.67	68.42	6.99	83.3
7	A / E	58.63	70.89	7.22	90.1
8	A / A	68.29	73.10	7.25	85.5
9	A / A	61.04	72.23	7.94	85.6
10	A / A	53.32	73.50	7.00	69.4
11	A / A	63.09	71.48	7.73	97.2
12	A / A	63.80	70.80	6.77	74.0
13	C / C	56.77	70.76	9.05	105.2
14					
15	E / C	66.81	67.87	6.88	111.5
16	A / A	60.66	70.31	7.97	127.8
17	B / A	66.08	70.88	6.72	84.3
18	B / B	61.19	70.37	8.28	81.9
19	B / F	46.58	71.45	8.35	106.9
20	A / A	66.51	72.74	8.05	107.7
21	A / A	62.49	69.72	8.22	125.7
22	A / B	61.10	70.49	7.90	79.5
23	D / F	47.35	70.78	8.30	109.9
24	E / F	54.88	67.64	7.85	86.7
25	C / A	59.23	70.22	8.09	91.5

2002 PRIME YT #1-A, WOOSTER, OH

SUNBEAM EXTRACT CO.

Var. No.	Variety	HD (d after Apr 30)	HT (in.)	ML (0-9)	WSSM (0-9)	SCAB1 (0-9)	RIPE (0-9) (June25)	LG (%)	YIELD (bu/a)	Rank	TW (lbs/bu)	Rank	Var. No.	2001 Milling/Baking Quality
1	Pioneer 25R57	27	37	0	7	0	5	95	36.7	25	56.5	23	1	A/A+
2	VALOR	29	41	0	0	0	3	93	55.8	15	57.6	21	2	C/B
3	VICAR	28	38	0	0	0	3	83	61.1	10	62.6	1	3	C/F
4	LISBO	27	40	0	0	0	5	93	49.0	21	61.4	3	4	C/F
5	LASER	17	40	0	1	0	8	92	39.8	22	58.7	18	5	B/D
6	HUSKY	25	39	0	0	0	6	84	57.1	13	60.7	6	6	A+/A+
7	JIFFY	18	41	0	1	0	7	0	79.2	5	61.1	4	7	C/F
8	DAISY	25	40	0	0	0	6	5	100.1	1	60.1	11	8	A+/A++
9	GATOR	27	39	0	0	0	4	73	58.9	11	61.6	2	9	B/B
10	LEROY	18	41	0	0	0	8	13	85.7	3	60.9	5	10	C/F
11	TOTEM	15	37	0	0	0	6	80	74.3	6	57.8	20	11	A/A++
12	SPARTA	30	38	0	0	0	3	85	55.7	16	59.4	15	12	A/C
13	MYSTIC	15	39	0	0	0	6	33	81.7	4	59.1	17	13	B/A+
14	FAVOR	18	40	0	0	0	7	91	39.8	22	58.3	19	14	A/B
15	HOPEWELL	27	40	0	0	0	5	67	62.9	8	60.7	6	15	A/A
16	BELLA	24	40	0	0	0	4	85	57.3	12	59.3	16	16	B/C
17	DARBY	24	41	0	0	0	5	2	96.3	2	59.7	13	17	B/C
18	PIXEL	26	38	0	4	0	7	73	51.4	19	60.3	9	18	A+/A
19	AMITY	28	41	0	1	0	5	87	49.6	22	57.0	22	19	A+/B
20	SALVO	17	40	0	0	0	6	90	61.3	9	59.8	12	20	A+/A+
21	RAZOR	17	39	0	0	0	6	55	69.1	7	60.4	8	21	B/B
22	BRAVO	18	39	0	0	0	6	92	53.7	18	55.8	25	22	A+/B
23	ARIVA	22	41	0	0	0	4	88	55.9	14	56.3	24	23	A+/A+
24	MIDAS	29	39	0	0	0	3	73	55.4	17	59.5	14	24	A+/A+
25	BUGLE	26	39	20	2	0	5	83	37.9	24	60.3	9	25	A+/A+
	Mean:								61.0					
	LSD.05:								9.4					
	CV(%):								12.2					

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2003 PRIME YT #1-A, WOOSTER, OH

SUNBEAM EXTRACT CO.

Var. No.	Variety	% SURV.	HD (May)	HT (in.)	ML %	SCAB1 (0-9)	SEPT (0-9) early	SEPT (0-9) late	LG (%)	Overall Appear. (0-9)	YIELD (bu/a)	Rank	TW (lbs/bu)	Rank	2002 Var. No.	Crop Milling/ Baking Score
1	Valor	96	24	40	0	1	1	5	80	4	65.3	16	51.2	21	1	A A+
2	Husky	98	21	34	33	1	2	7	3	7	75.4	12	54.1	13	2	A C
3	Jiffy	98	19	37	0	3	1	6	2	8	84.3	6	55.0	11	3	D F
4	Daisy	98	20	36	2	2	0	1	3	8	96.1	1	55.7	5	4	A++ A+
5	Gator	97	20	37	0	0	2	8	20	6	63.0	21	52.7	16	5	B C
6	Totem	96	21	32	0	1	1	7	37	5	64.1	19	51.6	20	6	B A
7	Mystic	94	19	34	1	1	4	9	12	6	49.5	25	49.0	23	7	B D
8	Darby	95	19	38	0	1	0	5	17	7	77.8	8	48.3	25	8	B B
9	Amity	95	21	39	0	4	0	3	7	6	83.7	7	55.2	7	9	C D
10	Razor	97	19	36	60	1	1	8	5	7	63.8	20	53.2	15	10	A B
11	Hopewell	97	23	38	2	1	4	8	30	5	71.9	14	51.6	19	11	B C
12	Abba	97	15	30	27	0	7	9	27	6	54.9	24	48.7	24	12	A A+
13	Mogur	97	19	35	0	2	1	7	33	5	61.9	22	50.9	22	13	A A+
14	Abner	97	22	37	0	0	0	5	6	7	66.7	15	56.5	2	14	A+ A+
15	Rodan	95	19	40	0	2	0	5	3	9	94.9	2	55.2	7	15	A+ A+
16	Angel	97	19	37	0	4	1	4	5	7	75.5	11	54.2	12	16	A D
17	Mocha	98	20	36	2	2	0	9	1	8	76.4	10	51.8	18	17	A+ A+
18	Eagle	97	18	33	35	0	1	9	6	7	61.5	23	51.9	17	18	A A+
19	Amigo	97	23	36	37	2	2	5	3	8	65.2	17	55.2	7	19	B E
20	Nehi	97	21	33	18	1	0	4	2	8	86.5	4	57.9	1	20	A++ B
21	Mojo	97	23	34	2	1	1	5	22	6	64.5	18	55.3	6	21	A B
22	Alpha	97	21	37	19	3	0	4	9	6	88.7	3	55.2	7	22	B E
23	Ivory	95	23	36	60	3	0	3	8	7	76.9	9	56.1	4	23	A+ A
24	Bravo	97	19	36	8	1	0	4	3	8	86.4	5	56.3	3	24	A A
25	Primo	97	19	35	1	1	0	4	50.0	4	74.3	13	54.1	13	25	A A

Mean:	73.2
LSD.05:	6.7
CV(%):	5.6

2004 0294

2004 PRIME YT #1A, WOOSTER, OH

SUNBEAM EXTRACT CO.

VAR. NO.	Variety	SURVIVAL (%)	HD (MAY)	HT (in.)	SCAB (0-9)	LG (%)	YIELD (BU/A.)	rank	TW (lbs/bu)	rank	Var. No.	2003 Milling/ Baking Score
1	DAISY (CK.)	94	19.0	30	2	0	74.9	1	53.8	20	1	A/A
2	AMITY	93	20.7	30	2	0	60.7	15	55.7	8.0	2	C/B
3	HOPEWELL (CK.)	89	22.0	30	2	0	64.7	10	55.6	9	3	C/A
4	RODAN	94	17.0	33	2	0	65.3	7	54.2	17	4	C/B
5	NEHI	94	20.3	26	2	0	65.1	8	56.8	4	5	C/A
6	ALPHA	89	20.3	29	3	0	61.5	13	54	19	6	C/A
7	BRAVO (CK.)	93	17.0	32	2	0	71.4	2	55.5	10	7	C/C
8	ZIPPY	94	18.7	31	3	0	62.3	11	53.8	20	8	B/C
9	LEXUS	91	20.7	31	2	0	58.2	20	54.7	15	9	B/A
10	MINGO	98	20.3	33	3	0	70.8	4	55.3	13	10	B/A
11	NICKY	94	17.7	31	3	0	65.1	8	55.5	10	11	C/A
12	SUNDEW	94	18.0	29	3	0	52.2	23	54.5	16	12	C/E
13	MISER	97	19.3	31	2	0	71.1	3	52.7	24	13	C/C
14	HAWK	92	21.3	28	3	0	60.3	16	57.1	3	14	C/B
15	BOSCO	100	15.0	31	3	0	69.1	5	55.3	13	15	D/C
16	KEITH	89	21.7	29	2	0	56.5	21	54.2	17	16	C/B
17	UNCLE	94	17.7	31	1	0	60.8	14	52.8	23	17	C/B
18	DUTCH	88	19.7	29	1	0	54.0	22	53.7	22	18	C/B
19	KARLA	96	20.0	28	2	0	60.0	17	56.3	7	19	XXX
20	SASSY	97	16.7	28	2	0	58.6	18	58	1	20	B/A
21	ULTRA	90	20.0	28	1	0	57.3	19	56.5	6	21	E/E
22	ZIGGY	91	17.0	27	2	0	50.4	24	56.8	4	22	XXX
23	GRAND	90	17.0	28	1	0	47.8	25	57.2	2	23	XXX
24	XENON	91	20.0	26	2	0	62.0	12	55.5	10	24	B/F
25	TREVOR	89	22.0	26	2	0	68.2	6	52.4	25	25	XXX

Mean:	61.9
LSD .05:	8.2
CV (%):	14.7

DATA RANKED ACCORDING TO
COMBINED QUALITY SCORE

ADVANCED NURSERY EVALUATION
FOR SOFT WHEAT MILLING AND BAKING QUALITY
2000 CROP

H.N. LAFEVER
WOOSTER, OHIO
CHOICE YIELD TRIAL #3

STD = #1247, PION. 25R26

LAB NO.		ENTRY	MILLING QUALITY SCORE		BAKING QUALITY SCORE		COMBINED QUALITY SCORE		MICR T.W. LB/BU	SOFT. EQUIV.		FLOUR YIELD	FLOUR PROT.	MICRO AWRC		COOKIE DIAM.		TOP GR.
1241	C.Y.T.#3 -	SE931065R-8 (DAISY)	108.8	A	110.0	A	108.8	A	58.07	66.51		72.74	8.05	54.4		17.98		4
1239	C.Y.T.#3 -	SE931012-4	107.8	A	104.9	A	104.9	A	59.27	64.03		72.22	6.70	56.4		18.14		5
1244	C.Y.T.#3 -	SE931097-17	105.1	A	104.3	A	104.3	A	58.51	60.15		71.06	7.97	55.4		18.37		4
1243	C.Y.T.#3 -	HOPEWELL	104.9	A	104.0	A	104.0	A	57.66	66.69		69.49	7.82	56.7		17.96		3
1246	C.Y.T.#3 -	SE911691-6 (GATOR)	103.9	A	106.0	A	103.9	A	59.08	62.49		69.72	8.22	54.5		17.35		2
1245	C.Y.T.#3 -	SE911691-4	103.5	A	104.6	A	103.5	A	57.44	65.54		69.35	7.94	56.5		17.54		3
1242	C.Y.T.#3 -	SE931088-16	103.1	A	100.4	A	100.4	A	57.56	61.66		69.82	7.69	56.5		17.36		3
****		STANDARD	100.0	A	100.0	A	100.0	A	57.13	61.01		69.20	8.60	55.4		17.24		4
1247	C.Y.T.#3 -	PION. 25R26	100.0	A	100.0	A	100.0	A	57.13	61.01		69.20	8.59	55.4		17.24		4
1248	C.Y.T.#3 -	SE921051-4 (GOMER)	105.9	A	98.8	B	98.8	B	58.95	61.10		70.49	7.90	55.8		17.23		3
1240	C.Y.T.#3 -	SE931034-23 (JIFFY)	97.3	B	63.8	F	63.8	F	59.66	46.58	Q	71.45	8.35	57.3	*	16.41	Q	1

2001 CROP

ADVANCED NURSERY EVALUATION
FOR SOFT WHEAT MILLING AND BAKING QUALITY

DATA RANKED ACCORDING TO
COMBINED QUALITY SCORE

N. LAFEVER
OOSTER, OHIO
JNBEAM EXTRACT CO.

'D = #1177, HOPEWELL

LAB NO.		ENTRY	MILLING QUALITY SCORE		BAKING QUALITY SCORE		COMB. QUALITY SCORE		MICRO T.W. LB/BU		SOFT. EQUIV. %		FLOUR YIELD %		FLOUR PROT. %		MICRO AWRC %		COOKIE DIAM. CM.		TOP GR.	LACTIC ACID RET'N
1197	16	DAISY	106.4	A	108.3	A	106.4	A	60.64		62.77		73.67		7.84		55.9		18.39		5	96.3
1176	1	PION. 25R57	104.5	A	106.4	A	104.5	A	61.88		58.75		71.99		7.14		55.3		18.56		5	94.1
1195	14	HUSKY	105.0	A	104.2	A	104.2	A	62.04		59.52		72.02		7.24		57.9		18.33		6	100.5
1189	8	MIDAS	104.7	A	102.9	A	102.9	A	60.84		59.91		73.14		6.78		57.9		18.25		4	85.0
1190	9	BUGLE	102.0	A	102.3	A	102.0	A	61.25		55.27	*	72.67		6.90		55.8		18.43		5	85.1
1200	19	TOTEM	100.1	A	106.9	A	100.1	A	61.30		59.22		70.64		7.29		57.3		18.53		5	99.0
"		STANDARD	100.0	A	100.0	A	100.0	A	61.45		59.91		70.49		7.37		58.9		18.23		5	109.2
1177	2	HOPEWELL	100.0	A	100.0	A	100.0	A	61.45		59.91		70.49		7.37		58.9		18.23		5	109.2
1187	7	RAZOR	99.5	B	97.0	B	97.0	B	59.83	*	60.63		70.43		7.89		56.9		17.93	*	4	115.5
1185	6	AMITY	101.0	A	96.9	B	96.9	B	60.67		60.04		70.80		6.93		57.6		17.95	*	3	92.7
1181	4	FAVOR	100.3	A	96.3	B	96.3	B	62.50		52.30	Q	71.64		8.44		58.2		18.31		6	81.0
1198	17	GATOR	99.8	B	96.0	B	96.0	B	61.93		56.90		70.86		7.81		57.5		18.05		4	118.9
1178	3	BRAVO	102.2	A	95.4	B	95.4	B	62.86		54.45	*	71.85		8.26		58.7		18.13		6	88.5
1191	10	VALOR	95.0	C	97.0	B	95.0	B	62.10		59.61		69.20	*	5.97		60.9	*	18.34		4	105.4
1183	5	DARBY	97.2	B	92.8	C	92.8	C	59.97	*	58.05		70.22		7.60		58.2		17.88	*	3	93.2
1194	13	LASER	99.8	B	89.6	D	89.6	D	61.20		58.15		70.75		7.89		58.3		17.73	Q	3	93.1
1192	11	VICAR	90.7	C	75.4	F	75.4	F	62.95		52.26	Q	69.19	*	7.44		62.3	Q	17.79	*	3	92.5
1193	12	LISBO	94.9	C	61.4	F	61.4	F	63.64		53.16	Q	70.03		6.75		62.9	Q	17.14	Q	3	101.1
1199	18	LEROY	93.1	C	49.6	F	49.6	F	62.17		46.85	Q	70.72		7.73		60.8	*	16.60	Q	2	116.0
1196	15	JIFFY	93.4	C	49.2	F	49.2	F	62.36		45.85	Q	70.93		7.93		61.5	*	16.71	Q	3	116.6

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2002 CROP

ADVANCED NURSERY EVALUATION
FOR SOFT WHEAT MILLING AND BAKING QUALITY

DATA RANKED ACCORDING TO
COMBINED QUALITY SCORE

H.N. LAFEVER
WOOSTER, OH
PRIME Y.T. #1

STD = #1537 BRAVO

LAB NO.		ENTRY	MILLING QUALITY SCORE		BAKING QUALITY SCORE		COMB. QUALITY SCORE		MICRO T.W. LB/BU		SOFT. EQUIV. %		FLOUR YIELD %		FLOUR PROT. %		MICRO AWRC %		COOKIE DIAM. CM.		TOP GR.	LACTIC ACID RET'N
1529	8	DAISY	107.5	A	102.4	A	102.4	A	60.13	Q	64.20		73.41		8.09		55.4		18.47		5	102.9
****		STANDARD	100.0	A	100.0	A	100.0	A	62.56		57.40		70.87		7.04		56.8		18.60		6	97.6
1537	22	BRAVO	100.0	A	100.0	A	100.0	A	62.56		57.40		70.87		7.04		56.8		18.60		6	97.6
1526	2	VALOR	99.7	B	105.0	A	99.7	B	60.97	*	64.90		70.07	*	6.34		57.4		18.80		5	109.4
1536	21	RAZOR	100.3	A	99.6	B	99.6	B	62.33		59.79		70.58		7.18		56.7		18.45		5	122.0
1531	11	TOTEM	98.0	B	101.4	A	98.0	B	60.60	*	58.26		70.42		8.83		56.2		18.55		5	100.2
1534	17	DARBY	95.5	B	97.9	B	95.5	B	60.02	Q	59.40		69.67	*	8.40		57.6		18.50		5	107.8
1527	6	HUSKY	102.0	A	94.5	C	94.5	C	62.36		62.49		70.56		7.49		58.1		18.37		4	102.4
1533	15	HOPEWELL	95.1	B	94.1	C	94.1	C	59.96	Q	64.29		69.02	Q	8.17		58.9	*	18.45		3	114.8
1530	9	GATOR	96.3	B	93.9	C	93.9	C	62.53		56.20		70.12		9.32		56.2		18.28	*	4	122.3
1532	13	MYSTIC	98.3	B	88.9	D	88.9	D	59.98	Q	58.11		70.59		8.13		57.3		18.08	Q	6	108.3
1535	19	AMITY	92.7	C	88.9	D	88.9	D	61.77		56.97		69.17	Q	7.40		56.4		18.02	Q	6	107.8
1528	7	JIFFY	87.9	D	42.4	F	42.4	F	60.65	*	45.27	Q	70.01	*	9.21		59.5	*	16.67	Q	3	114.5

2003 CROP

ADVANCED NURSERY EVALUATION

FOR SOFT WHEAT MILLING AND BAKING QUALITY

HOWARD LAFEVER

WOOSTER, OH

PRIME Y.T. # 1 & 2

STD = # 1574, BRAVO

LAB NO.		ENTRY	MILLING QUALITY SCORE		BAKING QUALITY SCORE		TEST WT. SCORE		SOFT. EQUIV. SCORE		MICRO T.W. LB/BU		SOFT. EQUIV. %		FLOUR YIELD %		FLOUR PROT. %		LACTIC ACID RET'N		COOKIE DIAM. CM.		TOP GR.	
****		STANDARD	67.6	C	60.8	C	73.60	B	62.50	C	59.9		58.6		70.1		9.76		105.7		16.67		1	
1566		HUSKY	64.3	C	79.0	B	72.17	B	61.02	C	59.7		57.9		69.5	Q	9.47		109.3		17.4		3	
1567		JIFFY	67.2	C	56.0	D	70.44	B	32.40	F	59.5		45.2	Q	70.1		9.32		116.9		16.48		2	
1568		DAISY	80.7	A	84.8	A	70.87	B	68.93	C	59.5		61.5		72.7		8.70		114.1		17.63		3	
1569		AMITY	60.9	C	78.5	B	76.02	B	55.06	D	60.1		55.3	*	68.8	*	8.81		103.4		17.38		2	
1570		HOPEWELL	65.2	C	86.3	A	58.23	D	68.64	C	58.0	*	61.3		69.7		9.19		111.5		17.69		4	
1571		RODAN	69.3	C	75.0	B	65.05	C	62.68	C	58.8		58.7		70.5		9.71		125.9		17.24		2	
1572		NEHI	67.4	C	95.3	A	72.73	B	52.74	D	59.8		54.2	*	70.1		9.46		83.1		18.05		3	
1573		ALPHA	69.0	C	94.0	A	82.34	A	51.98	D	60.9		53.9	*	70.4		8.69		91.5		18		4	
1574		BRAVO	67.6	C	60.8	C	73.60	B	62.50	C	59.9		58.6		70.1		9.76		105.7		16.67		1	
1575		ZIPPY	72.6	B	68.8	C	79.67	B	51.74	D	60.6		53.8	*	71.1		8.73		122.9		16.99		2	
1576		LEXUS	76.0	B	104.6	A	75.40	B	61.63	C	60.1		58.2		71.8		8.24		104.5		18.42		5	
1577		KYOTO	64.0	C	75.3	B	50.80	D	70.21	B	57.1	Q	62.0		69.4		9.91		106.9		17.25		2	
1578		NILLY	64.0	C	59.3	D	40.76	E	58.28	D	55.9	Q	56.7		69.4		10.85	*	94.9		16.61		1	
1579		CHILI	64.7	C	66.0	C	43.61	E	66.49	C	56.3	Q	60.4		69.6		9.15		98.0		16.88		2	
1580		MINGO	73.8	B	89.8	A	99.25	A	54.71	D	62.9		55.1	*	71.4		8.82		71.4		17.79		4	
1581		NICKY	64.3	C	84.1	A	79.92	B	52.50	D	60.6		54.1	*	69.5		9.21		115.5		17.6		4	
1582		FLINT	66.1	C	72.5	B	56.50	D	57.74	D	57.8	*	56.5		69.8		10.56	*	105.4		17.14		2	
1583		FLEX	63.7	C	71.6	B	41.63	E	68.29	C	56.0	Q	61.2		69.4	*	8.54		111.2		17.1		3	

200400294

Minnesota Crop Improvement Association

1900 Hendon Ave.

St. Paul, MN 55108

Laboratory Report of Analysis

Account No.	Date Received	Date Completed	Lab Number
2580	05/18/04	05/19/04	03-4074

Ohio Seed Improvement Assn.
6150 Avery Road Box 477
Dublin OH 43017

Sender's Information*

Product	Daisy
Kind	Soft red winter wheat
Genus/Species	
Lot Number	03-DAISY1
Class	Service

*The information provided here is that of the sender and not of the laboratory.

		Viability Analysis					
		Germ Date	Germination %	Dormant %	Hard %	Total Viable	
Soft red winter wheat	*Latin Missing*	-N-	-N-	-N-	-N-	-N-	

Other Determinations
Phenol reaction: Brown.

Status: None.

Remarks
Sampled and analyzed according to AOSA procedures.
Copies to: (2580) Ohio Seed Improvement Assn. and Boots, Jim

Tests Requested Phenol test. No other tests requested.

Signature: Gary M. Reid

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Plant Science Department
South Dakota State University
Brookings, SD 57707-1096

Seed Testing Laboratory

Phone: (605) 688-4589
FAX: (605) 688-4013

Ohio Seed Improvement – Wheat

SDSU Seed Testing Lab

Gel #02-102

09/23/02

Multiple differences between the 3 varieties.

Horticulture and Crop Science Series 228 July 2003

2003 OHIO WHEAT PERFORMANCE TEST

THE OHIO STATE UNIVERSITY OARDC

THE OHIO STATE UNIVERSITY EXTENSION

Ohio State University Extension
Ohio Agricultural Research and Development Center
The Ohio State University

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OHIO WHEAT PERFORMANCE TRIALS, 2003

James Beuerlein, Professor, Dept. Horticulture & Crop Science
Pat Lipps, Professor, Dept. Plant Pathology
Richard Minyo, Jr., Research Associate, Dept. Horticulture & Crop Science

The purpose of the Ohio Wheat Performance Trial is to evaluate wheat varieties, blends, brands, and breeding lines for yield, grain quality and other important performance characteristics. This information gives wheat producers comparative information for selecting the varieties best suited for their production system and market. Varieties differ in yield potential, winter hardiness, maturity, standability, disease and insect resistance, and other agronomic characteristics. Selection should be based on performance from multiple test sites and years.

EVALUATION PROCEDURES

Each entry was evaluated at five test sites (see front cover) using four replications per site in a randomized complete block design. Plots consisted of 7 rows, 7.5 inches apart and 35 feet long. Participating companies selected the seeding rate for each of their varieties. Tests were planted within ten days after the fly-safe date with approximately 30 pounds of nitrogen applied at planting followed by the addition of about 70-100 pounds in early spring. Herbicides were applied as needed for weed control. The following data were collected:

Yield Plots were harvested with a self propelled plot harvester with yield being reported in bushels per acre at 13.5 percent moisture.

Test Weight Test weights were measured in lb/bu at all locations using harvest grain moisture.

Seed Size Thousands of harvested seeds per pound. (*Example:* 15.5 = 15,500 seeds per pound.)

Percent Lodging Lodging was a visual estimate of the percent of plants that lean more than 45 degrees from vertical.

Plant Height Plant height was the distance from the soil surface to the top of the heads.

Heading Date The heading date was the average calendar day of the year on which 50 percent of the heads were completely emerged. (*Example: Day 136 = May 16.*)

Powdery mildew (PM) Powdery mildew (caused by *Erysiphe graminis*) was evaluated at Wooster on May 27 when plants were in Feekes growth stages 10.1 to 10.5.1. Each plot was rated based on a 0 to 10 scale where: 0 = 0 to trace % leaf area covered; 1 = leaf

4 with trace - 50%; 2 = leaf 3 with 1-5%; 3 = leaf 3 with 5-15%; 4 = leaf 3 with > 15%; 5 = leaf 2 with 1-5%; 6 = leaf 2 with 5-15%; 7 = leaf 2 with >15%; 8 = leaf 1 with 1-5%; 9 = leaf 1 with 5-15%; and 10 = leaf 1 with >15% leaf area covered (leaf 1 = flag leaf). This scale takes into account the percentage leaf area affected and the progress of the disease upward on the plants.

Head Scab Fusarium head scab was assessed at the Pickaway County plots on June 11 which was 18 to 21 days after flowering and the appropriate time to assess for scab severity. The plants were in the watery ripe stage of development (Feekes GS 10.5.4 to 11.1). The disease level was uniform across the field and known susceptible lines (Patterson, Sission) had the higher levels of disease than the more resistant variety (Freedom). However, disease severity was related to heading date since the earlier varieties generally had more disease than varieties that flowered later. Therefore the data is confounded by heading date and may not represent the true reaction to scab. For example a susceptible later maturing variety may have had low scab levels because it escaped some infection because its flowering missed a rain event. The data represent the percent of spikelets per head with symptoms.

Flour Yield Flour yield is the percent flour yield from milled whole grain.

Flour Softness Flour softness is the percent of fine-granular milled flour. Values higher than approximately 50 indicate kernel textures that are appropriate for soft wheat. Generally, high values are more desirable for milling and baking.

CULTURAL PRACTICES BY TEST SITE

	Test Site				
	1	2	3	4	5
County	Wood	Crawford	Wayne	Darke	Pickaway
Previous Crop	Soybean	Soybean	Soybean	Soybean	Soybean
Soil Type	Hoytville	Blount	Canfield	Kokomo	Ockley
Tillage	No-Till	Disk	Conventional	No-Till	No-Till
Plant Date	Oct. 2	Oct. 3	Oct. 1	Oct. 8	Oct. 15
Soil pH,	6.3	6.6	6.3	5.8	5.9
Soil Test P (ppm)	28	55	50	31	12
Soil Test K (ppm)	147	254	177	202	79
Fertilizer (N,P,K)	112-46-76	127-69-60	120-60-60	117-94-60	117-69-90
Herbicides applied	Stinger	2,4-D	Harmony Extra	HyDep	Harmony Extra
Harvest Date	July 17	July 16	July 18	July 19	July 15

GROWING CONDITIONS

Field and weather conditions were favorable for timely planting in October, 2002. Fall growth was marginally adequate throughout most of the state and all test sites experienced some tillering before the onset of winter dormancy. Winter survival was good with very little

winterkill. The weather from March through June was cooler and wetter than normal with less sunlight than normal in May and June. The crop headed at the same time as in 2002 and then had a relatively long grain fill period in June. The cool cloudy weather of June slowed grain fill in many areas resulting in lower than expected yields especially in southern Ohio which experienced more cloud cover than northern Ohio. Rainfall was quite variable throughout the state all spring and caused flooding in some areas. All test sites received rain between physiological maturity and harvest which lowered test weights and reduced grain quality, especially in southern Ohio. The number 2 test site also received hale during this period. The amount of yield and quality loss was a function of the variety maturity date and weather at the test location. The generally low level of disease in Northern Ohio allowed for higher yields than in southern Ohio.

RESULTS

Results of the 2003 performance evaluation of soft red winter wheat varieties can be found in Table 1. Tables 2 and 3 contain multi-year performance data.

Eight soft white wheat varieties were evaluated along with the soft red varieties at sites 1, 2 and 3. Performance for the soft white varieties is presented in Table 4 with two-year data in table 5.

Ten varieties at sites 2 and 5 were also tested in 15 inches wide rows in addition to the more normal 7.5 inch row spacing. Variety performance in the two row spacings is presented in Table 6. Reduced plant height and tillering prevented the wider row spacings from producing yields comparable to those for 7.5 inch rows.

Table 7 contains the brand name and seed source of each variety tested in 2003.

Entries in the data tables are arranged in order of increasing heading date averaged for several locations. A least significant difference (LSD) is reported for yield and other characteristics. Yields and characteristics of two varieties are significantly different 70 percent of the time if their yields or characteristics differ by more than the LSD value reported. Flour and softness ratings were performed by USDA-ARS soft wheat quality laboratory, at OARDC in Wooster, OH, Charles Gaines, director.

This report can be found on the Internet at: *www.ag.ohio-state.edu/~perf*. Any column of data can be sorted by clicking at the top of the column. Inclusion of varieties in the Ohio Wheat Performance Trial does not constitute an endorsement of a particular entry by The Ohio State University, Ohio Agriculture Research and Development Center, or Ohio State University Extension.

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20040294

Table 1. Yield and Agronomic Characteristics of Wheat Varieties Tested in Ohio, 2003.

			Yield						Characteristics						Disease		Grain Quality	
Brand	Variety	Seeds/ ft row	Site 1	Site 2	Site 3	Site 4	Site 5	Avg.	% Stand	Test Wt.	Seeds /lb	Lodg.	Ht.	Head Date	Mild. Rate	Scab Rate	Flour	Soft-ness
			bu/ac							lb/bu	(1000)	%	in.				%	%
Steyer	Weaver	24	85.7	74.6	89.4	76.4	71.8	79.6	100	56.5	11.7	7	38	142	7	2	72.7	50.8
Pub. Certified	Patterson	24	78.5	56.7	67.6	55.8	63.4	64.4	99	54.5	13.7	3	37	142	7	13	72.7	51.4
Vigoro	V9212	23	88.0	77.9	89.6	76.0	71.8	80.6	100	56.1	12.6	4	39	142	6	3	72.7	49.7
Steyer	Feck	30	79.7	65.0	80.6	54.8	69.2	69.9	100	56.8	14.6	4	36	142	7	2	71.9	47.3
Steyer	Jacob	29	82.0	70.5	77.9	74.0	66.6	74.2	100	54.5	14.4	7	33	142	7	12	70.4	54.8
Steyer	Bascom	27	88.4	77.1	80.8	74.6	71.9	78.6	100	56.9	13.0	9	38	142	7	2	72.5	50.9
Pioneer Brand	25R78	25	91.7	73.5	88.8	74.2	75.6	80.8	100	57.4	12.6	1	35	142	6	4	71.9	52.4
Pro. Certified	Bravo	22	84.4	71.0	79.9	71.4	69.9	75.3	100	57.9	11.2	1	37	142	6	2	71.7	51.3
JGL	Coyote	25	95.2	74.4	99.6	76.3	77.0	84.5	100	59.1	11.9	3	37	142	1	4	71.3	46.6
NK	Coker 9474	30	76.4	64.8	82.6	63.6	74.8	72.4	100	60.7	11.9	3	37	142	4	1	71.4	47.4
Gries Seed	Honey	24	89.5	62.2	75.3	68.3	66.9	72.4	100	54.8	12.8	12	35	142	0	1	72.8	53.1
Genesis Brand	Venture	25	78.2	62.5	83.1	55.0	67.2	69.2	100	55.6	14.4	16	37	143	0	6	73.9	50.2
AGI	525	23	88.5	62.4	74.7	68.9	68.7	72.6	100	54.9	12.6	15	36	143	0	1	72.8	52.3
Va. Tech.	Sisson	22	85.1	63.9	84.7	71.9	66.8	74.5	100	55.3	13.0	19	33	143	1	14	71.5	49.8
Pioneer Brand	25R49	25	93.5	62.6	75.8	66.3	75.2	74.7	100	54.3	11.1	11	35	143	8	3	71.2	49.7
Wellman	W 115	25	93.7	63.4	74.0	69.8	70.7	74.3	100	54.8	12.8	17	36	143	0	1	73.2	52.0
Rupp	RS 931	24	88.6	59.8	73.5	66.1	69.6	71.5	99	54.7	12.2	12	35	143	0	2	72.9	52.2
C & M Seeds	Kristy	25	77.2	59.0	69.5	70.3	73.4	69.9	100	54.9	11.5	17	39	143	6	5	74.3	44.5
Vigoro	Tribute	25	88.6	65.5	78.4	68.1	74.6	75.1	99	59.3	12.6	12	34	143	0	2	70.8	50.7
Beck	Ex 6108	24	88.1	63.8	68.4	62.9	71.5	70.9	100	55.4	12.9	5	38	143	8	2	72.6	59.5
Thompson	TS 8040	28	84.1	69.5	76.3	63.4	65.6	71.8	100	58.8	12.9	11	40	143	6	2	73.0	55.8
Pioneer Brand	25R47	25	99.2	77.1	91.6	77.9	77.2	84.6	100	56.0	12.1	18	34	144	0	2	73.3	59.2
Gries Seed	Monarch	24	78.6	68.4	76.8	60.8	64.0	69.7	100	57.5	13.0	9	39	144	7	1	73.4	56.9
Missouri State	MO 96903	25	82.1	67.5	69.4	65.2	68.9	70.6	100	55.5	13.0	15	40	144	2	3	70.7	47.9
Pioneer Brand	25R44	25	93.0	75.6	68.9	73.1	72.1	76.5	100	56.4	12.2	10	36	144	7	1	71.3	55.2
Pioneer Brand	25R37	23	89.0	67.0	89.1	71.7	75.3	78.4	99	58.7	11.0	11	35	144	4	1	69.9	51.1
AGI	201	23	84.1	64.7	77.2	58.3	68.4	70.5	100	58.3	12.9	20	36	144	0	3	70.2	45.2
Wellman	W 130	25	88.9	62.9	79.6	53.6	68.4	70.7	100	58.2	12.6	19	36	144	0	2	70.1	46.7
Pro. Certified	Daisy	22	85.5	73.2	89.8	72.9	69.1	78.1	99	55.2	12.8	8	36	145	1	4	73.8	55.6
Pub. Certified	Roane	22	82.6	56.9	88.6	57.1	66.0	70.2	98	59.3	13.8	6	35	145	1	1	70.3	54.7
Vigoro	V9211	23	83.6	62.8	72.6	69.9	72.3	72.2	100	55.9	13.1	11	38	145	7	6	71.6	50.7
Va. Tech.	McCormick	22	75.0	61.3	82.3	61.9	72.3	70.5	98	58.4	13.8	3	32	145	0	1	72.1	51.3
Steyer	Bernard	26	87.3	70.5	75.3	68.1	72.4	74.7	100	56.5	12.9	21	40	145	4	3	73.3	53.9
Steyer	Bouillon	27	76.7	65.8	67.8	42.5	72.8	65.1	100	54.8	12.1	16	39	145	5	1	70.1	51.1
Wellman	W 9940	25	91.6	74.6	76.2	67.7	72.8	76.6	100	56.9	12.5	15	40	145	4	2	73.3	53.8
Beck	110	26	81.1	65.9	67.6	66.4	65.9	69.4	100	57.1	13.8	22	39	145	6	2	70.3	54.3

Table 1, continued

			Yield						Characteristics						Disease		Grain Quality	
Brand	**Variety**	**Seeds/ ft row**	**Site 1**	**Site 2**	**Site 3**	**Site 4**	**Site 5**	**Avg.**	**% Stand**	**Test Wt.**	**Seeds /lb**	**Lodg.**	**Ht.**	**Head Date**	**Mild. Rate**	**Scab Rate**	**Flour**	**Soft- ness**
			----------bu/ac----------							lb/bu	(1000)	%	in.				%	%
Rupp	RS 909	24	87.5	71.7	78.9	69.9	70.8	75.7	100	56.7	12.3	16	39	145	3	3	72.7	54.6
Wellman	W 9910	25	76.1	66.7	68.7	45.2	69.2	65.2	100	53.9	12.3	21	39	145	4	1	69.8	51.3
JGL	Magic **	25	80.1	61.2	76.2	61.1	63.1	68.3	100	57.4	10.4	18	37	145	0	3	72.3	34.1
NK	B 960457	25	81.6	71.8	82.0	64.6	72.5	74.5	100	53.9	11.8	11	38	145	6	3	72.5	54.5
Ohio State	OH 669	25	89.5	68.7	76.1	70.9	76.6	76.4	99	57.1	10.9	23	38	146	1	1	71.2	56.4
Ohio State	OH 645	25	85.6	69.5	80.7	68.7	63.2	73.5	100	57.5	13.2	1	39	146	0	2	73.1	56.7
NK	Coker 9663	25	80.1	74.0	91.1	56.1	72.8	74.8	99	56.8	11.8	3	40	146	2	2	70.3	51.4
Pub. Certified	Freedom	24	86.3	57.0	60.9	64.7	66.1	67.0	100	53.3	13.7	24	38	147	4	1	70.9	49.3
Pub. Certified	Hopewell	24	81.6	60.0	81.4	53.0	68.2	68.8	100	55.3	11.6	2	37	147	2	1	70.7	53.7
NK	Coker 9184	28	77.7	52.4	63.7	59.1	61.5	62.9	100	57.0	12.5	8	35	147	1	2	71.8	55.2
Steyer	Bowerman	25	80.6	68.8	83.9	64.6	69.5	73.5	100	56.6	11.8	17	37	147	1	2	72.9	56.0
Thompson	TS 3060	30	88.4	61.5	75.5	63.5	70.8	71.9	100	56.6	13.2	21	39	147	0	0	71.2	54.6
Gries Seed	Brazen	30	96.3	62.2	68.2	62.3	71.6	72.1	100	56.2	12.9	22	40	148	0	0	71.8	52.6
Steyer	Jentes	35	93.6	66.3	62.5	64.0	73.4	72.0	100	56.2	14.4	24	40	148	0	0	71.7	53.5
Wellman	W 150	25	91.2	63.9	72.5	63.1	75.6	73.3	100	56.4	13.8	25	39	148	0	0	70.9	56.7
AGI	538	20	86.2	62.0	66.4	57.1	69.9	68.3	99	55.5	13.5	27	39	149	0	0	71.2	54.8
NK	B 950943	25	77.3	60.0	71.6	59.1	67.3	67.1	100	55.0	11.9	15	37	149	1	1	72.5	52.4
	High	35	99.2	77.9	99.6	77.9	77.2	84.6	100	60.7	14.6	27	40	149	8	14	74.3	59.5
	Average	25	85.3	66.3	77.4	64.9	70.2	72.8	100	56.4	12.6	12	37	144	3	3	71.9	52.0
	Low	20	75.0	52.4	60.9	42.5	61.5	62.9	98	53.3	9.6	1	32	142	0	0	69.8	34.1
	LSD (P=0.3)		3.6	2.9	4.6	2.3	1.4											

** Hard Red variety

Table 2. Yield and Agronomic Characteristics of Wheat VarietiesTested in Ohio, 2002 and 2003.

Brand	Variety	Yield						Characteristics			
		Site 1	Site 2	Site 3	Site 4*	Site 5	Avg.	Test Wt.	Lodg.	Ht.	Head Date
		bu/ac						lb/bu	%	in.	
Pro. Certified	Bravo	76.9	78.5	80.7		61.6	74.4	60.0	1	38	143
Va.Tech.	Sisson	79.1	72.9	91.6		69.9	78.4	58.9	10	35	143
Steyer	Weaver	75.0	80.9	86.3		71.9	78.5	59.4	4	40	143
Pub. Certified	Patterson	69.4	63.1	74.5		67.2	68.5	58.5	2	40	143
Pioneer Brand	25R78	84.6	79.9	90.7		80.4	83.9	60.3	1	37	143
Vigoro	V9212	73.8	83.2	87.0		74.2	79.6	59.2	2	40	143
NK	Coker 9474	69.7	71.6	77.7		69.4	72.1	62.3	1	38	144
C & M Seeds	Kristy	71.5	65.6	74.7		74.3	71.6	58.6	10	40	144
Gries Seed	Honey	77.5	71.8	80.9		71.9	75.5	58.4	6	36	144
AGI	525	77.1	70.8	79.1		72.5	74.9	58.5	8	37	144
Pioneer Brand	25R49	84.7	74.8	84.4		78.0	80.5	58.8	6	36	144
Wellman	W 115	80.8	68.7	78.8		74.6	75.6	58.5	9	37	144
Vigoro	Tribute	77.5	74.0	76.6		74.3	75.6	61.9	11	35	145
Rupp	RS 931	77.4	69.9	80.2		74.5	75.5	58.4	8	37	145
Thompson	TS 8040	76.7	75.2	80.7		73.0	76.4	61.2	5	42	145
Pioneer Brand	25R37	79.4	75.7	90.3		78.8	81.0	60.4	5	37	145
Beck	110	72.9	75.3	75.7		69.2	73.3	60.1	11	41	145
Steyer	Bouillon	74.0	78.5	79.2		77.4	77.3	58.3	8	40	145
Pioneer Brand	25R44	82.0	83.0	79.9		76.3	80.3	60.2	5	37	145
Vigoro	V9211	77.0	73.4	82.0		77.4	77.5	59.1	6	39	145
Va.Tech.	McCormick	70.2	75.6	83.4		73.9	75.8	61.5	1	34	145
Wellman	W 9910	73.8	79.0	80.7		74.2	76.9	57.9	13	40	146
Pub. Certified	Roane	74.9	72.7	87.1		68.8	75.9	61.9	5	37	146
NK	Coker 9663	77.2	82.8	91.9		77.5	82.4	59.8	2	42	146
Wellman	W 130	79.5	72.9	82.2		74.2	77.2	60.7	10	38	146
Steyer	Bernard	79.1	80.3	80.8		77.3	79.4	59.2	10	41	146
Wellman	W 9940	81.0	83.3	82.4		76.2	80.7	59.4	7	41	147
NK	Coker 9184	74.5	61.4	72.2		66.1	68.6	60.0	4	36	147
Rupp	RS 909	80.2	80.6	82.4		74.8	79.5	59.0	9	41	147
Ohio State	OH 645	77.8	78.0	81.9		68.3	76.5	59.8	1	40	147
Steyer	Bowerman	67.8	75.9	86.5		74.1	76.1	59.4	9	38	147
Pub. Certified	Hopewell	74.3	69.7	80.6		73.1	74.4	58.9	1	38	147
Pub. Certified	Freedom	79.0	68.2	69.4		73.1	72.4	56.8	12	40	147
Wellman	W 150	86.0	79.1	82.6		82.8	82.6	58.9	14	41	148
AGI	538	82.8	78.3	77.5		76.5	78.8	58.7	16	41	149
	High	86.0	83.3	91.9		82.8	83.9	62.3	16	42	149
	Average	77.0	75.0	81.5		73.6	76.8	59.5	7	39	145
	Low	67.8	61.4	69.4		61.6	68.5	56.8	1	34	143

*site 4 data lost due to flooding 2002

Table 3. Yield and Agronomic Characteristics of Wheat VarietiesTested in Ohio, 2001 - 2003.

		Yield						Characteristics			
Brand	Variety	Site 1	Site 2	Site 3	Site 4*	Site 5	Avg.	Test Wt.	Lodg.	Ht.	Head Date
		bu/ac						lb/bu	%	in.	
Pro. Certified	Bravo	73.2	80.8	79.9		66.3	75.1	59.7	0	38	141
Pub. Certified	Patterson	68.2	69.5	74.4		67.9	70.0	58.5	1	39	142
Va. Tech.	Sisson	73.7	76.8	88.5		72.3	77.8	58.2	7	34	142
NK	Coker 9474	66.2	73.8	77.7		66.8	71.1	61.4	1	37	142
Wellman	W 115	77.5	75.3	79.2		76.5	77.1	58.0	8	38	143
Gries Seed	Honey	75.5	78.5	81.7		73.6	77.3	58.3	5	37	143
Thompson	TS 8040	73.7	74.0	78.5		73.9	75.0	60.5	5	42	143
Steyer	Bouillon	72.3	81.1	79.2		77.7	77.6	57.8	5	40	144
Wellman	W 9910	72.9	79.3	82.0		77.1	77.8	57.3	8	39	144
NK	Coker 9663	74.0	80.3	88.6		78.1	80.2	59.1	4	42	144
Steyer	Bernard	76.5	82.1	82.7		76.4	79.4	58.8	7	41	145
Pub. Certified	Roane	73.5	77.6	87.1		71.7	77.5	61.3	3	36	145
Wellman	W 9940	77.2	83.7	85.0		76.8	80.7	59.0	5	41	145
Rupp	RS 909	77.7	81.8	83.5		74.4	79.3	58.8	6	41	145
NK	Coker 9184	71.0	68.8	74.1		67.9	70.4	59.6	3	36	145
Pub. Certified	Hopewell	72.6	77.0	81.0		74.9	76.4	58.3	1	38	145
Pub. Certified	Freedom	74.6	72.8	72.7		77.0	74.3	56.6	8	40	146
	High	77.7	83.7	88.6		78.1	80.7	61.4	8	42	146
	Average	73.5	77.3	80.9		73.5	76.3	58.9	5	39	144
	Low	66.2	68.8	72.7		66.3	70.0	56.6	0	34	141

*site 4 data lost due to flooding 2002

Table 4. Yield and Agronomic Characteristics of Soft White Winter Wheat Varieties Tested in Ohio, 2003.

Brand	Variety	Seeds/ ft row	Yield				Characteristics						Disease	Grain Quality	
			Site 1	Site 2	Site 3	Avg.	% Stand	Test Wt.	Seeds /lb	Lodg.	Ht.	Head Date	Mildew Rating	Flour	Softness
			bu/ac					lb/bu	(1000)	%	in.			%	%
Va. Tech.	VAN98W-170WS	22	67.9	55.0	82.5	68.5	97	54.7	12.8	22	35	142	1	73.0	48.3
Va. Tech.	VA97W-375WS	22	75.0	59.4	78.6	71.0	99	53.2	14.0	20	32	143	0	70.7	44.0
Pioneer Brand	25W60	25	86.0	78.8	68.8	77.9	100	54.6	12.6	19	38	144	6	72.0	50.7
Genesis Brand	Caledonia	25	80.4	63.5	82.6	75.5	100	54.5	11.6	30	37	147	1	72.8	53.6
MCIA	MSU 6234	26	82.2	69.1	87.7	79.7	100	57.6	11.9	21	39	148	0	71.9	48.7
MCIA	Pearl	26	80.9	65.8	80.9	75.9	99	55.0	12.9	21	38	148	1	71.5	48.2
MCIA	AC Ron	26	72.0	66.7	80.8	73.2	100	53.8	11.5	21	43	151	3	70.3	52.0
Vigoro	V9314W	23	71.0	65.8	79.6	72.1	98	54.3	11.5	30	42	152	1	72.4	41.7
	High	26	86.0	78.8	87.7	79.7	100	57.6	14.0	30	43	152	6	73.0	53.6
	Average	24	76.9	65.5	80.2	74.2	99	54.7	12.3	23	38	147	1	71.8	48.4
	Low	22	67.9	55.0	68.8	68.5	97	53.2	11.5	19	32	142	0	70.3	41.7
	LSD (P=0.3)		3.1	3.0	3.6										

Table 5. Yield and Agronomic Characteristics of Soft White Winter Wheat VarietiesTested in Ohio, 2002 and 2003.

Brand	Variety	Yield				Characteristics			
		Site 1	Site 2	Site 3	Avg.	Test Wt.	Lodg.	Ht.	Head Date
		bu/ac				lb/bu	%	in.	
Va. Tech.	VA97W-375WS	72.7	70.5	84.7	76.0	58.5	10	34	144
Pioneer Brand	25W60	78.1	82.8	81.2	80.7	59.1	9	39	145
MCIA	Pearl	76.2	73.0	84.8	78.0	58.6	14	40	148
Genesis Brand	Caledonia	78.9	75.5	87.8	80.7	57.4	15	39	148
MCIA	AC Ron	75.6	77.3	84.1	79.0	56.7	14	45	151
	High	78.9	82.8	87.8	80.7	59.1	15	45	151
	Average	76.3	75.8	84.5	78.9	58.1	12	39	147
	Low	72.7	70.5	81.2	76.0	56.7	9	34	144

Table 6. Effect of Row Spacing on the Yield of 10 Soft Red Winter Wheat Varieties, 2003.

		Site 2				Site 5			
Brand	**Variety**	**Yield 7.5 in.**	**Yield 15 in.**	**Test Wt. 7.5 in.**	**Test Wt. 15 in.**	**Yield 7.5 in.**	**Yield 15 in.**	**Test Wt. 7.5 in.**	**Test Wt. 15 in.**
		bu/ac	bu/ac			bu/ac	bu/ac		
Pub. Certified	Freedom	57.0	50.0	51.4	51.9	66.1	58.1	52.2	51.2
Pub. Certified	Hopewell	60.0	52.6	56.5	54.6	68.2	58.5	52.7	52.1
Pub. Certified	Patterson	56.7	51.5	55.2	55.0	63.4	57.2	50.7	49.9
NK	Coker 9663	74.0	69.1	56.8	57.4	72.8	66.3	55.4	55.9
Pub. Certified	Roane	56.9	52.3	57.7	59.4	66.0	58.3	56.7	56.0
Va. Tech.	Sisson	63.9	52.0	55.4	54.4	66.8	58.5	50.3	47.1
Pro. Certified	Bravo	71.0	69.8	59.3	59.2	69.9	62.8	55.5	54.5
Va. Tech.	McCormick	61.3	54.9	56.3	57.7	72.3	61.2	56.2	55.8
Pro. Certified	Daisy	73.2	66.4	56.6	55.8	69.1	60.7	50.3	49.5
Steyer	Jacob	70.5	62.7	54.3	54.9	66.6	59.6	52.3	49.6
	High	74.0	69.8	59.3	59.4	72.8	66.3	56.7	56.0
	Average	64.4	58.1	55.9	56.0	68.1	60.1	53.2	52.1
	Low	56.7	50.0	51.4	51.9	63.4	57.2	50.3	47.1

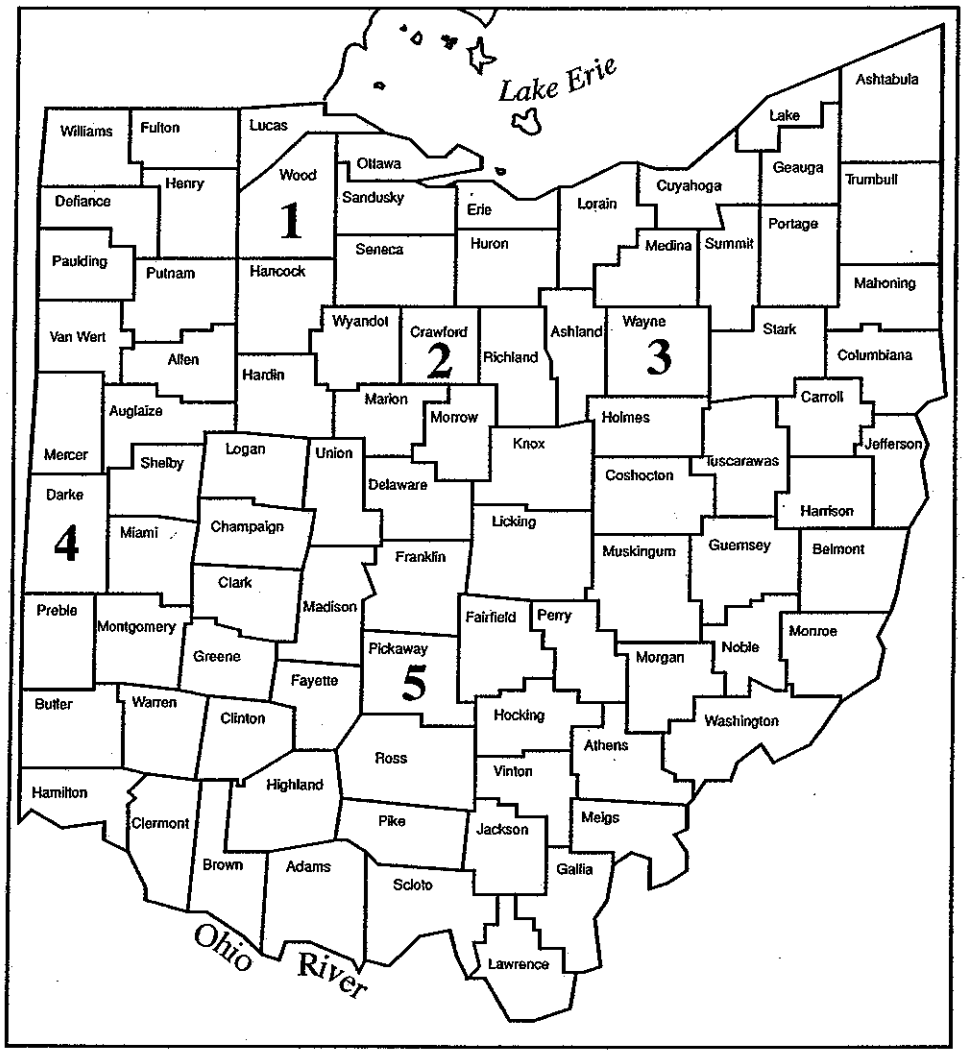
There were no significant differences for Lodging and Height.

Table 7. Ohio Wheat Performance Test, 2003 - Seed Source.

Brand	Producer	Variety
AGI	Advanced Genetics, Inc. PO Box 145 Croton, OH 43013 740-893-2501	201 525 538
Beck	Beck's Superior Hybrids 6767 East 276th St. Atlanta, IN 46031 317-984-3508	110 Ex 6108
C&M Seeds	C&M Seeds 6180 5th Line Minto, RR #3 Palmerston, Ontario N0P 2G0 519-343-2126	Kristy
Certified	Central Ohio Seed Testing 6150 Avery Rd, Box 1580 Dublin, OH 43017 614-792-0334	Bravo Daisy
Genesis Brand Seed	Genesis Brand Seed PO Box 21085 Lansing, MI 48909 517-887-1684	Caledonia Venture
Gries Seed	Gries Seed Farms, Inc. 2348 N. Fifth St. Fremont, OH 43420 419-332-5571	Brazen Honey Monarch
JGL	JGL, Inc. 3540 S. US 231 Greencastle, IN 46135 765-653-5402	Coyote Magic
MCIA	Michigan Crop Improvement Assoc. PO Box 21008 Lansing, MI 48909 517-332-3546	AC Ron MSU 6234 Pearl
Public	Ohio Seed Improvement Assoc. 6150 Avery Rd, Box 477 Dublin, OH 43017 614-889-1136	Freedom Hopewell Patterson
Pioneer Brand	Pioneer, A Dupont Company 210 Westfield Dr Archbold, OH 43502 800-874-8718	25R37 25R44 25R47 25R49 25R78 25W60
Vigoro	Royster-Clark, Inc. 717 Robinson Rd. SE Washington C. H., OH 43160 740-869-2181	Tribute V9211 V9212 V9314W
Rupp	Rupp Seeds, Inc. 17919 County Rd. B Wauseon, OH 43567 419-337-1841	RS 908 RS 931
Steyer	Steyer Seeds 6154 N County Rd. 33 Tiffin, OH 44883 419-992-4570	Bascom Bernard Bouillon Bowerman Feck Jacob Jentes Weaver
NK	Syngenta Seeds, Inc. PO Box 1240 Winterville, NC 28590 252-746-3004	Coker 9184 Coker 9474 Coker 9663 B 950943 B 960457
Thompson	Thompson Seed Farm, Inc. 4920 Defiance Trail Delphos, OH 45833 800-686-1774	TS 3060 TS 8040
Public	Virginia Polytechnic Inst. & Virginia Crop Improvement Assoc. PO Box 338 Warsaw, VA 22572 804-333-3485	Roane Sisson McCormick VA97W-375WS VAN98W-170WS
Wellman	Wellman Seeds, Inc. 23778 Delphos-Jennings Rd. Delphos, OH 45833 800-717-7333	W 115 W 130 W 150 W 9910 W 9940

Horticulture and Crop Science Series 228 July 2004

2004 OHIO WHEAT PERFORMANCE TEST



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Ohio State University Extension
Ohio Agricultural Research and Development Center
The Ohio State University

OHIO WHEAT PERFORMANCE TRIALS, 2004

James Beuerlein, Professor, Dept. Horticulture & Crop Science
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Richard Minyo, Jr., Research Associate, Dept. Horticulture & Crop Science

The purpose of the Ohio Wheat Performance Trial is to evaluate wheat varieties, blends, brands, and breeding lines for yield, grain quality and other important performance characteristics. This information gives wheat producers comparative information for selecting the varieties best suited for their production system and market. Varieties differ in yield potential, winter hardiness, maturity, standability, disease and insect resistance, and other agronomic characteristics. Selection should be based on performance from multiple test sites and years.

EVALUATION PROCEDURES

Each entry was evaluated at five test sites (see front cover) using four replications per site in a randomized complete block design. Plots consisted of 7 rows, 7.5 inches apart and 40 feet long. Participating companies specified the seeding rate for each of their varieties. Tests were planted within ten days after the fly-safe date and approximately 30 pounds of nitrogen was applied at planting followed by the addition of 70-100 pounds in early spring. Herbicides were applied as needed for weed control and the following data were collected:

Yield Plots were harvested with a self propelled plot harvester, and yield is reported in bushels per acre at 13.5 percent moisture.

Test Weight Test weights were measured in lb/bu at all locations using harvest grain moisture and presented as an average for 5 locations.

Seed Size Thousands of harvested seeds per pound. (*Example:* 15.5 = 15,500 seeds per pound.)

Percent Lodging Lodging was a visual estimate of the percent of plants that lean more than 45 degrees from vertical.

Plant Height Plant height was the distance from the soil surface to the top of the heads.

Heading Date The heading date was the average calendar day of the year on which 50 percent of the heads were completely emerged. (*Example: Day 136 = May 16.*)

Powdery mildew (PM) Powdery mildew (caused by *Erysiphe graminis*) was assessed in Wayne Co. on May 26 when most varieties were flowering (Feekes growth stage 10.5.1). Each plot was rated based on a 0 to 10 scale where: 0 = 0 to trace % leaf area covered; 1 = leaf 4 with trace - 50%; 2 = leaf 3 with 1-5%; 3 = leaf 3 with 5-15%; 4 = leaf 3 with > 15%; 5 = leaf 2 with 1-5%; 6 = leaf 2 with 5-15%; 7 = leaf 2 with >15%; 8 = leaf 1 with 1-

5%; 9 = leaf 1 with 5-15%; and 10 = leaf 1 with >15% leaf area covered (leaf 1 = flag leaf). This scale takes into account the percentage leaf area affected and the progress of the disease upward on the plants.

Leaf Blotch Complex (LBC) Leaf blotch complex (caused by *Stagonospora nodorum*, *Pyrenophora tritici-repentis* and *Bipolaris sorokiniana*) was assessed in Wayne Co. on June 18 when most varieties were in the soft dough growth stage (Feekes growth stage 11.1). Each plot was rated based on the percentage of flag leaf area covered by leaf blotches.

Fusarium head scab (FHS) Fusarium head scab (caused by Fusarium graminearum) was assessed in Pickaway Co., Crawford Co. and Wayne Co.on June 4, June 15 and June 18, respectively, when plants were in the late milk to soft dough growth stage (Feekes growth stage 10.5.4 to 11.1). Each plot was rated based on a disease severity estimate as the average percentage of spikelets affected per head.

Flour Yield Flour yield is the percent flour yield from milled whole grain.

Flour Softness Flour softness is the percent of fine-granular milled flour. Values higher than approximately 50 indicate kernel textures that are appropriate for soft wheat. Generally, high values are more desirable for milling and baking.

CULTURAL PRACTICES BY TEST SITE

	Test Site				
	1	2	3	4	5
County	Wood	Crawford	Wayne	Darke	Pickaway
Previous Crop	Soybean	Soybean	Soybean	Soybean	Soybean
Soil Type	Hoytville	Blount	Canfield	Kokomo	Ockley
Tillage	No-Till	Disk	Conventional	No-Till	No-Till
Plant Date	Oct. 3	Oct. 9	Oct. 11	Oct. 8	Oct. 10
Soil pH,	6.6	6.8	6.4	6.8	6.1
Soil Test P (ppm)	26	26	53	20	28
Soil Test K (ppm)	134	124	116	100	112
Fertilizer (N,P,K)	120-46-92	128-80-105	120-60-60	117-92-60	122-81-105
Herbicides applied	Stinger	2,4-D	Harmony Extra	Harmony Extra	Harmony Extra
Harvest Date	July 8	July 6	July 10	July 1	June 30

GROWING CONDITIONS

Field and weather conditions were favorable for timely planting in October, 2003. Fall growth was marginally adequate throughout most of the state and all test sites experienced some tillering before the onset of winter dormancy. Winter survival was good with very little winterkill. The weather from March through June was warmer and wetter than normal with less sunlight than normal in May and June. The crop headed earlier than normal and had a relatively long grain fill period in June. The cool cloudy weather of June slowed grain fill in many areas

resulting in lower than expected yields. Wet weather in late May and early June was responsible for increased disease levels at some test sites. All test sites received rain between physiological maturity and harvest which lowered test weights, reduced grain quality, and delayed harvest. The amount of yield and quality loss was a function of the variety maturity date and weather at the test location. The generally low level of disease in Northwestern Ohio allowed for higher yields and test weights than at other test sites.

RESULTS & EVALUATIONS

Results of the 2004 wheat variety performance evaluation is presented in tables 1-6. Entries in the data tables are arranged in order of increasing average heading date. A least significant difference (LSD) is reported for yield and can be used to determine if the performance of two varieties was statistically different. The yields of two varieties are expected to be significantly different 70 percent of the time if their yields differ by more than the LSD value reported. Test to determine flour yield and softness were performed by USDA-ARS soft wheat quality laboratory, at OARDC in Wooster, OH, Charles Gaines, director.

Test results for the 59 soft red winter wheat varieties are presented in Table 1. Tables 2 and 3 contain multi-year performance data. Depending on variety and test site, 2004 yields were between 51.6 and 93.2 bushels per acre, and average test weight ranged from 54.0 to 61.1 pounds per bushel. The average heading date was three days earlier than in 2003, and plants were two inches shorter than in 2003. Variety selection should be based on disease resistance, average yield across test sites and years (tables 2 & 3), winter hardiness, test weight and standability.

Six soft white winter wheat varieties were evaluated along with the soft red varieties at sites 1, 2 and 3. Performance of those varieties is presented in Table 4, with two-year performance data in table 5.

Soft white winter wheat and hard red winter wheat should never be mixed together or be mixed with soft red winter wheat because they have very different flour characteristics and end uses. Mixing of different classes of wheat destroys their unique utility, makes them unacceptable for quality premiums and reduces their usefulness to animal feed only.

Table 6. Reaction of winter wheat varieties to various diseases in Ohio.

Disease evaluations Weather conditions in Wayne Co. favored early and late disease development providing the opportunity to evaluate powdery mildew, the leaf blotch complex and head scab. Powdery mildew was sufficiently uniform throughout the plots that varietiy comparisons could be made. Varieties lacking sufficient resistance had powdery mildew developing on the second leaf (leaf below the flag leaf) by late boot stage. Varieties with this level of susceptibility would likely have significant yield loss when weather conditions favor powdery mildew development.

Several different leaf blotch diseases were prevalent in the Wayne Co. plots. Stagonospora leaf blotch was the most common, but tan spot and spot blotch were also present.

No attempt was made to differentiate among these diseases since the symptoms are nearly identical and the damage they cause to plants is similar. Varieties differed greatly in their reaction to leaf blotch (3.0% to 52% flag leaf damage) such that the more resistant lines had less than 10% of the flag leaf area affected whereas the more susceptible varieties had over 30% leaf area affected. Yield was significantly impacted on varieties with over 20% flag leaf area affected at this growth stage.

Fusarium head scab was common in all locations but disease evaluations were conducted in Pickaway Co., Crawford Co. and Wayne Co. because these locations had relatively uniform disease pressure throughout the plots. Disease severity was greater in Crawford Co. and Wayne Co. than in Pickaway Co. However, varieties responded similarly across all three locations indicating that varieties with lower levels of scab have stable levels of moderate resistance and are predicted to have less scab under moderate levels of disease pressure.

Table 7 contains the company name, address and telephone number for each variety entered in the 2004 wheat performance trial.

This report can be found on the Internet at: *www.agcrops.osu.edu and www.ag.ohio-state.edu/~perf*. Any column of data can be sorted by clicking at the top of the column, which makes it easy to arrange varieties in order by any characteristic for comparison purposes.

Inclusion of varieties in the Ohio Wheat Performance Trial does not constitute an endorsement of any variety by The Ohio State University, Ohio Agriculture Research and Development Center, or Ohio State University Extension.

Table 1. Yield and Agronomic Characteristics of Wheat Varieties Tested in Ohio, 2004.

Brand	Variety	Seeds/ ft row	Yield: Site 1	Yield: Site 2	Yield: Site 3	Yield: Site 4	Yield: Site 5	Yield: Avg.	Characteristics: % Stand	Characteristics: Test* Wt.	Characteristics: Seeds /lb	Characteristics: Lodg.	Characteristics: Ht.	Head Date	Disease: PM	Disease: LBC	Disease: FHS	Grain Quality: Flour	Grain Quality: Soft-ness
			bu/ac							lb/bu	(1000)	%	in.					%	%
Pro. Certified	Bravo	23	80.1	74.8	59.4	65.4	75.4	71.0	100	58.8	12.3	0	35	138	7	30	18	72.0	53.4
Seed Consultants	SC 1343	27	83.0	77.2	68.0	69.1	78.0	75.1	100	58.0	12.3	2	37	138	7	9	11	72.4	53.2
Steyer	Weaver	25	81.1	77.4	67.0	65.4	73.1	72.8	100	57.7	11.7	5	37	138	6	19	13	72.4	53.3
Steyer	Jacob	24	78.4	67.0	63.5	63.6	69.3	68.4	100	57.2	15.0	4	31	139	6	36	27	71.2	54.8
AGRA	Skyline	22	82.9	76.9	66.2	63.8	76.9	73.3	100	58.0	11.9	4	36	139	6	16	12	72.7	52.7
Vigoro	V9212	23	83.1	71.6	67.7	64.2	74.0	72.1	100	57.7	12.1	1	37	139	6	19	13	72.9	53.2
Steyer	Bascom	24	83.2	77.3	63.6	63.0	77.1	72.8	100	57.9	12.1	2	36	139	6	15	11	73.0	53.5
Seed Consultants	SC 1325	27	86.4	81.1	73.3	67.7	77.6	77.2	100	59.3	14.7	2	34	139	3	18	11	70.4	51.0
NK	Coker 9312	25	80.0	69.1	63.2	62.1	66.8	68.2	100	58.1	14.5	2	30	139	6	10	20	71.7	54.2
Va. Tech	Sisson	22	80.8	66.5	62.4	57.5	67.4	66.9	100	55.9	13.6	0	30	139	5	28	39	72.1	53.8
NK	Coker 9474	30	79.0	76.8	68.0	59.9	73.4	71.4	100	61.1	12.8	0	33	139	6	11	4	71.7	49.3
Pioneer Brand	25R78	24	89.2	71.0	59.0	64.5	78.7	72.5	100	58.2	13.7	0	31	139	7	19	26	72.9	58.1
Steyer	Wiley	25	88.0	76.1	69.8	65.0	77.5	75.3	100	58.9	13.4	0	34	140	3	20	12	70.5	49.3
Vigoro	V9412	25	88.7	76.3	68.8	65.6	76.1	75.1	100	59.0	13.5	0	34	140	4	19	13	70.5	49.3
Strike	205	23	88.7	82.5	75.0	68.6	75.2	78.0	100	59.0	13.4	0	35	140	4	20	8	70.5	50.2
Seed Consultants	SC 1335	27	83.2	76.6	62.8	63.2	74.3	72.0	100	58.3	13.8	2	37	140	8	34	13	73.1	59.2
AGI	101	25	88.7	77.7	70.5	66.9	76.5	76.1	100	59.2	13.2	0	34	140	4	16	10	70.2	49.5
Vigoro	Tribute	25	80.9	74.4	71.6	68.1	71.1	73.2	100	60.6	13.8	0	32	140	0	6	9	70.7	53.7
Pioneer Brand	25R49	24	85.3	76.2	53.0	69.8	77.0	72.3	100	57.6	11.7	2	31	140	8	31	16	73.6	56.4
Va. Tech	McCormick	22	78.8	73.6	67.8	61.0	68.6	70.0	100	60.4	15.4	7	31	140	1	10	4	71.3	55.6
AGRA	Honey	25	88.9	73.8	58.5	61.4	70.4	70.6	100	56.2	14.6	2	33	140	1	30	12	74.3	54.7
Va. Tech	VAN98W-342	22	81.2	68.3	72.7	63.4	72.8	71.7	100	57.7	12.8	0	28	140	0	12	15	72.2	58.2
Strike	204	23	80.1	75.0	70.2	65.0	66.4	71.3	100	57.4	15.5	2	40	140	2	19	15	71.9	55.2
Wellman	W 115	24	89.9	65.3	58.8	65.9	72.0	70.4	100	56.3	14.1	1	33	140	2	26	13	73.9	55.5
Thompson Seed	TS 8040	25	80.6	76.7	65.2	68.1	67.8	71.7	100	59.8	14.6	4	38	140	6	15	5	73.7	57.8
AGI	202	25	78.7	75.4	53.9	66.5	71.9	69.3	100	57.2	13.6	0	32	141	8	31	20	71.9	56.2
Rupp	RS 919	23	84.8	76.0	60.8	59.8	72.5	70.8	100	59.2	14.8	1	37	141	6	16	8	73.5	57.6
Pro. Certified	Daisy	26	87.6	75.4	59.8	68.2	72.6	72.7	100	56.3	14.2	0	33	141	4	52	14	73.4	59.0
AgriPro	Cooper	22	88.2	76.6	57.7	65.5	81.5	73.9	100	57.2	14.7	0	31	141	8	31	20	73.3	54.6
AgriPro	Benton	21	85.8	73.0	65.0	65.3	73.6	72.5	100	56.9	13.1	0	33	141	5	28	14	70.4	54.8
Wellman	W 120	25	82.6	71.2	53.9	65.0	71.7	68.9	100	57.0	13.3	0	32	141	8	29	18	72.3	55.9
Pioneer Brand	25R47	24	91.5	79.4	60.5	71.7	84.6	77.5	100	55.8	13.5	0	32	141	6	12	18	72.8	60.6
Univ. of Arkansas.	AR 910-9-1	21	75.8	66.2	58.5	55.0	68.9	64.9	100	57.0	12.5	2	35	141	5	10	18	73.5	55.3
NK	Coker 9663	25	82.5	77.5	64.1	68.3	66.5	71.8	100	57.5	12.6	4	37	141	6	7	11	71.4	50.1
Wellman	W 9910	24	86.0	77.8	64.4	65.5	70.2	72.8	100	56.4	13.2	8	35	141	5	8	8	70.7	57.4
NK	Coker 9375	25	83.0	68.6	51.6	60.8	67.7	66.3	100	54.0	13.4	0	37	141	5	51	24	71.7	56.2

Table 1, continued

			Yield						Characteristics						Disease			Grain Quality	
Brand	**Variety**	**Seeds/ ft row**	**Site 1**	**Site 2**	**Site 3**	**Site 4**	**Site 5**	**Avg.**	**% Stand**	**Test* Wt.**	**Seeds /lb**	**Lodg.**	**Ht.**	**Head Date**	**PM**	**LBC**	**FHS**	**Flour**	**Soft- ness**
			----------bu/ac----------							lb/bu	(1000)	%	in.					%	%
Gries Seeds	Jack	24	86.8	73.0	68.0	61.0	64.8	70.7	100	58.9	14.1	3	33	141	0	21	6	69.7	50.6
Certified	Roane	22	80.0	71.3	65.3	62.9	71.5	70.2	100	59.6	16.7	1	31	141	5	10	8	69.0	57.0
Steyer	Besecker	24	82.7	70.9	65.4	62.7	77.5	71.9	100	58.2	14.3	0	37	141	6	15	8	71.7	55.7
Pioneer Brand	25R35	24	93.0	79.5	63.4	73.1	85.3	78.9	100	58.2	15.1	0	33	142	6	14	3	69.3	59.2
Wellman	W 9940	25	87.8	78.4	65.8	62.6	73.0	73.5	100	58.2	13.4	0	37	142	5	9	9	72.9	57.2
Steyer	EX 401	25	93.2	76.3	63.3	64.8	75.5	74.6	100	58.5	16.2	1	32	142	6	21	7	72.2	56.2
NK	B 970051	25	79.9	72.6	68.5	60.3	65.6	69.4	100	56.5	14.2	5	31	142	4	10	13	72.7	50.7
Ohio State Univ.	OH 708	25	87.5	73.5	69.1	63.8	72.6	73.3	100	55.9	13.4	0	38	142	4	5	13	73.7	57.6
Pub. Certified	Hopewell	23	88.1	73.6	70.5	59.7	73.4	73.0	100	57.8	13.0	0	35	142	5	25	5	69.4	60.4
Steyer	Hartman	25	83.4	71.3	59.3	66.6	71.4	70.4	100	59.4	11.8	5	37	142	7	11	4	71.3	55.6
Pub. Certified	Freedom	25	84.4	76.2	62.4	51.8	70.2	69.0	100	56.0	14.8	0	37	142	6	12	4	71.7	51.9
Pub. Certified	Cecil	25	91.3	75.4	64.5	59.1	70.6	72.2	100	57.0	11.9	4	36	142	6	19	4	71.1	59.6
Va. Tech	VA97W-024	22	83.1	61.7	66.5	66.6	74.1	70.4	100	56.0	14.4	3	34	142	3	11	10	71.8	53.8
Seed Consultants	SC 1352	27	84.6	72.7	58.2	61.1	75.7	70.4	100	59.6	12.2	0	37	142	7	16	5	71.8	54.6
Hyland	Wonder	21	85.3	75.2	60.7	60.6	70.7	70.5	100	58.5	11.4	2	38	143	3	21	3	71.5	62.5
Gries Seeds	Brazen	24	84.4	72.0	63.2	62.0	66.4	69.6	100	56.9	15.5	6	37	143	0	10	1	69.8	60.8
AgriPro	Douglas	22	86.4	70.0	57.2	61.7	70.0	69.1	100	55.6	14.8	0	34	143	6	8	11	73.1	55.7
Thompson Seed	TS 3060	22	82.2	65.5	61.3	63.0	62.7	66.9	100	56.4	17.1	6	38	143	0	10	1	70.3	58.8
Wellman	W 150	23	83.1	67.3	62.4	62.8	61.0	67.3	100	56.2	15.8	8	37	143	0	14	2	69.9	59.6
AGI	538	25	86.1	73.8	62.9	59.6	59.4	68.4	100	56.4	16.1	8	37	143	0	15	2	70.3	59.0
Rupp	RS 947	23	87.2	70.2	67.1	59.7	65.0	69.9	100	56.8	16.2	4	38	143	0	11	1	70.7	57.2
Pub. Certified	Truman	25	87.4	72.0	67.6	63.0	75.4	73.1	100	58.6	13.8	8	37	143	6	3	1	69.7	55.1
Univ. of Arkansas.	Pat	21	79.5	66.0	55.2	57.7	74.1	66.5	100	58.0	14.1	0	36	144	6	14	4	74.3	56.4
	High	30	93.2	82.5	75.0	73.1	85.3	78.9	100	61.1	17.1	8	40	144	8	52	39	74.3	62.5
	Average	24	84.5	73.5	63.8	63.7	72.2	71.5	100	57.7	13.8	2	35	141	5	18	11	71.8	55.4
	Low	21	75.8	61.7	51.6	51.8	59.4	64.9	100	54.0	11.4	0	28	138	0	3	1	69.0	49.3
	LSD (P=0.3)		1.9	3.0	2.1	3.0	2.4	2.5											
	CV		3.1	5.6	4.5	6.6	4.5	5.4											

* 5 site average

Table 2. Yield and Agronomic Characteristics of Wheat VarietiesTested in Ohio, 2003 and 2004.

Brand	Variety	Yield						Characteristics			
		Site 1	Site 2	Site 3	Site 4	Site 5	Avg.	Test Wt.	Lodg.	Ht.	Head Date
		bu/ac						lb/bu	%	in.	
Steyer	Weaver	83.4	76.0	78.2	70.9	72.4	76.2	57.1	6	38	140
Pro. Certified	Bravo	82.3	72.9	69.7	68.4	72.6	73.2	58.4	1	36	140
Vigoro	V9212	85.6	74.8	78.7	70.1	72.9	76.4	56.9	2	38	140
Steyer	Jacob	80.2	68.8	70.7	68.8	68.0	71.3	55.8	6	32	140
Steyer	Bascom	85.8	77.2	72.2	68.8	74.5	75.7	57.4	5	37	140
Pioneer Brand	25R78	90.4	72.3	73.9	69.4	77.1	76.6	57.8	0	33	141
NK	Coker 9474	77.7	70.8	75.3	61.8	74.1	71.9	60.9	1	35	141
Va. Tech	Sisson	83.0	65.2	73.6	64.7	67.1	70.7	55.6	10	32	141
AGRA	Honey	89.2	68.0	66.9	64.8	68.7	71.5	55.5	7	34	141
Pioneer Brand	25R49	89.4	69.4	64.4	68.1	76.1	73.5	55.9	6	33	141
Vigoro	Tribute	84.7	70.0	75.0	68.1	72.9	74.1	59.9	6	33	141
Wellman	W 115	91.8	64.4	66.4	67.8	71.3	72.3	55.5	9	34	142
Thompson Seed	TS 8040	82.3	73.1	70.7	65.8	66.7	71.7	59.3	7	39	142
Pioneer Brand	25R47	95.3	78.2	76.1	74.8	80.9	81.1	55.9	9	33	142
Va. Tech	McCormick	76.9	67.4	75.1	61.4	70.4	70.3	59.4	5	31	142
Pro. Certified	Daisy	86.6	74.3	74.8	70.6	70.9	75.4	55.7	4	35	143
Certified	Roane	81.3	64.1	76.9	60.0	68.8	70.2	59.5	3	33	143
Wellman	W 9910	81.0	72.2	66.6	55.4	69.7	69.0	55.2	14	37	143
Wellman	W 9940	89.7	76.5	71.0	65.2	72.9	75.0	57.6	7	38	143
NK	Coker 9375	82.3	70.2	66.8	62.7	70.1	70.4	54.0	5	38	143
NK	Coker 9663	81.3	75.7	77.6	62.2	69.6	73.3	57.2	4	39	144
Ohio State University	Cecil	90.4	72.0	70.3	65.0	73.6	74.3	57.0	13	37	144
Pub. Certified	Hopewell	84.8	66.8	75.9	56.4	70.8	70.9	56.6	1	36	144
Pub. Certified	Freedom	85.3	66.6	61.7	58.2	68.1	68.0	54.7	12	37	144
Thompson Seed	TS 3060	85.3	63.5	68.4	63.2	66.7	69.4	56.5	14	38	145
Gries Seed	Brazen	90.3	67.1	65.7	62.2	69.0	70.9	56.5	14	38	145
Wellman	W 150	87.1	65.6	67.5	62.9	68.3	70.3	56.3	16	38	146
AGI	538	86.2	67.9	64.6	58.3	64.7	68.3	56.0	17	38	146
	High	95.3	78.2	78.7	74.8	80.9	81.1	60.9	17	39	146
	Average	85.4	70.4	71.2	64.9	71.0	72.6	56.9	7	36	142
	Low	76.9	63.5	61.7	55.4	64.7	68.0	54.0	0	31	140

Table 3. Yield and Agronomic Characteristics of Wheat Varieties Tested in Ohio, 2002 - 2004.

Brand	Variety	Yield						Characteristics			
		Site 1	Site 2	Site 3	Site 4*	Site 5	Avg.	Test Wt.	Lodg.	Ht.	Head Date
		bu/ac						lb/bu	%	in.	
Pro. Certified	Bravo	78.0	77.3	73.6		66.2	73.8	59.6	1	37	141
Steyer	Weaver	77.1	79.7	79.9		72.3	77.3	58.8	4	39	142
Va. Tech	Sisson	79.7	70.7	81.9		69.1	75.3	57.9	7	34	142
Vigoro	V9212	76.9	79.4	80.6		74.1	77.7	58.7	2	39	142
Pioneer Brand	25R78	86.1	76.9	80.2		79.8	80.8	59.6	0	35	142
NK	Coker 9474	72.8	73.3	74.5		70.7	72.8	61.9	1	36	142
AGRA	Honey	81.3	72.4	73.4		71.4	74.6	57.7	5	35	143
Vigoro	Tribute	78.6	74.1	74.9		73.3	75.2	61.4	7	34	143
Pioneer Brand	25R49	84.9	75.3	73.9		77.7	77.9	58.4	4	35	143
Wellman	W 115	83.8	67.5	71.8		73.7	74.2	57.7	7	36	143
Thompson Seed	TS 8040	78.0	75.7	75.5		71.2	75.1	60.7	5	40	144
Va. Tech	McCormick	73.1	75.0	78.2		72.2	74.6	61.1	3	33	144
Wellman	W 9910	77.9	78.6	75.3		72.8	76.1	57.4	11	38	144
NK	Coker 9663	79.0	81.0	82.6		73.9	79.1	59.1	2	40	144
Certified	Roane	76.6	72.3	79.8		69.7	74.6	61.1	4	35	144
Wellman	W 9940	83.3	81.7	76.9		75.1	79.2	59.0	5	40	145
Pub. Certified	Hopewell	78.9	71.0	77.2		73.2	75.1	58.5	0	37	145
Pub. Certified	Freedom	80.8	70.9	67.1		72.1	72.7	56.5	8	39	146
Wellman	W 150	85.1	75.1	75.9		75.5	77.9	58.0	12	40	147
AGI	538	83.9	76.8	72.6		70.8	76.0	57.9	13	40	147
	High	86.1	81.7	82.6		79.8	80.8	61.9	13	40	147
	Average	79.8	75.2	76.3		72.7	76.0	59.1	5	37	144
	Low	72.8	67.5	67.1		66.2	72.7	56.5	0	33	141

*site 4 data lost due to flooding 2002

Table 4. Yield and Agronomic Characteristics of Soft White Winter Wheat Varieties Tested in Ohio, 2004.

Brand	Variety	Seeds/ ft row	Yield				Characteristics						Disease			Grain	
			Site 1	Site 2	Site 3	Avg.	% Stand	Test* Wt.	Seeds /lb	Lodg.	Ht.	Head Date	MR	LBC	FHS	Flour	Soft ness
			bu/ac					lb/bu	(1000)	%	in.					%	%
Va. Tech	VA97W-375WS	22	79.8	64.6	70.2	71.5	100	55.8	15.5	0	29	140	2	14	30	71.6	50.8
Va. Tech	VAN98W-170WS	22	78.4	64.8	55.0	66.1	100	56.1	13.5	0	32	141	5	21	34	74.6	51.1
Pioneer Brand	25W41	24	90.6	70.7	57.8	73.0	100	56.6	15.8	0	32	141	7	16	9	71.5	59.3
MCIA	Pearl	29	76.6	64.6	64.3	68.5	100	55.3	16.2	0	36	143	4	10	12	71.9	54.4
Ohio Foundation	AC Essex	26	87.9	79.1	62.3	76.4	100	54.9	13.5	0	40	143	6	5	6	73.2	54.9
Vigoro	V9314W	25	81.6	76.8	67.1	75.2	100	54.4	13.7	0	41	145	4	10	4	73.0	44.5
	High	29	90.6	79.1	70.2	76.4	100	56.6	16.2	0	41	145	7	21	34	74.6	59.3
	Average	25	82.5	70.1	62.8	71.8	100	55.5	14.7	0	35	142	5	13	16	72.6	52.5
	Low	22	76.6	64.6	55.0	66.1	100	54.4	13.5	0	29	140	2	5	4	71.5	44.5
	LSD (P=0.3)		1.7	2.4	1.9	4.8											
	CV		2.8	4.7	4.0	7.5											

* 3 site average

Table 5. Yield and Agronomic Characteristics of Soft White Winter Wheat VarietiesTested in Ohio, 2003 and 2004.

Brand	Variety	Yield				Characteristics			
		Site 1	Site 2	Site 3	Avg.	Test Wt.	Lodg.	Ht.	Head Date
		bu/ac				lb/bu	%	in.	
Va. Tech	VAN98W-170WS	73.2	59.9	68.8	67.3	55.4	11	33	141
Va. Tech	VA97W-375WS	77.4	62.0	74.4	71.3	54.5	10	31	142
MCIA	Pearl	78.8	65.2	72.6	72.2	55.1	10	37	145
Vigoro	V9314W	76.3	71.3	73.4	73.6	54.4	15	42	149
	High	78.8	71.3	74.4	73.6	55.4	15	42	149
	Average	76.4	64.6	72.3	71.1	54.8	12	36	144
	Low	73.2	59.9	68.8	67.3	54.4	10	31	141

Table 6. Reaction of winter wheat varieties to various diseases in Ohio.

Brand	Cultivar	Powdery mildew	Leaf rust	Leaf blotch*	Head scab
AGI	101	MR	MR	MS	MS
	202	S	S	S	S
	538	R	S	MS	MR
AGRA	Honey	R	S	S	MS
	Skyline	MS	MS	MS	MS
AgriPro	Benton	MR	MS	S	S
	Cooper	S	MS	S	S
	Douglas	MS	MR	MR	MS
Gries Seeds	Brazen	R	S	MR	MR
	Jack	R	MS	S	MS
Hyland	Wonder	MR	S	S	MR
MCIA	Pearl	MR	R	MR	MS
Ohio Foundation Seeds	AC Essex	MS	MS	MR	MS
Ohio State University	Cecil	MR	S	S	MR
	OH 708	MR	R	MR	MS
NK (Syngenta)	B 970051	MR	MR	MR	MS
	Coker 9312	MR	R	MR	S
	Coker 9375	MR	MR	S	S
	Coker 9474	MR	R	MS	MR
	Coker 9663	MR	MR	MR	MS
Pioneer	25R35	MS	R	MS	MR
	25R47	MS	MR	MS	S
	25R49	S	MR	S	S
	25R78	S	MS	S	S
	25W41	S	MR	MS	MS
Proprietary Certified	Bravo	S	S	S	S
	Daisy	MR	S	S	MS
Public Certified	Freedom	MR	MR	MS	MR
	Hopewell	MR	S	S	MS
	Roane	MR	MR	MR	MS
	Truman	MR	R	MR	MR
Rupp	RS 919	MR	R	MS	MS
	RS 947	R	S	MS	MR
Seed Consultants	SC 1325	MR	R	S	MS
	SC 1335	S	MR	S	MS
	SC 1343	S	S	MR	MS
	SC 1352	S	MR	MS	MS
Steyer	Bascom	MS	S	MS	MS
	Besecker	MS	MR	MS	MS
	EX401	MS	R	S	MS
	Hartman	S	MR	MS	MR
	Jacob	MS	R	S	S
	Weaver	MS	S	S	MS
	Wiley	MR	MR	S	MS

Table 6. continued

Brand	Cultivar	Powdery mildew	Leaf rust	Leaf blotch*	Head scab
Strike	204	MR	MR	S	S
	205	MR	MR	S	MS
Thompson Seed	TS 3060	R	MS	MR	MR
	TS 8040	MS	MS	MS	MS
U. Arkansas	AR 910-9-1	MR	S	MR	S
	Pat	MS	MS	MS	MR
Va. Tech.	McCormick	R	MS	MR	MR
	Sisson	MR	S	S	S
	VA97W-024	MR	S	MS	MS
	VA97W-375WS	R	R	MS	S
	VAN98W-342	R	R	MS	S
	VAN98W-170WS	MR	R	S	S
Vigoro	Tribute	R	R	MR	MS
	V9212	MS	MS	S	MS
	V9314W	MR	MR	MR	MR
	V9412	MR	MS	S	MS
Wellman	W 115	R	S	S	MS
	W 120	S	S	S	S
	W 150	R	S	MS	MR
	W 9910	MR	MR	MR	MS
	W 9940	MR	MR	MR	MS

R = resistant; MR = moderately resistant; MS = moderately susceptible; S = susceptible;
Blank spaces = no data
Reactions scored during 2004. Obtain new information each year due to expected changes in reactions over time.
* Leaf Blotch due to Stagonospora nodorum, Bipolaris sorokinianum and/or Pyrenophora tiritici-repentis

Table 7. Ohio Wheat Performance Test, 2004 - Seed Source.

Brand	Producer	Variety
AGI	Advanced Genetics, Inc. P.O. Box 145 Croton, OH 43013 740-893-2501	101 202 538
AGRA	AGRA, Inc. P.O. Box 6 Croton, OH 43013 740-893-2501	Honey
AgriPro	AgriPro Wheat Box 411, 520 E. 10505 Brookston, IN 47923 765-563-3111	Benton Cooper Douglas
Hyland	AgriPro Wheat Box 411, 520 E. 10505 Brookston, IN 47923 765-563-3111	Wonder
Strike	Burtch Seed Company 4742 Tama Rd. Celina, OH 45822 419-363-3713	204 205
Certified	Central Ohio Seed Testing 6150 Avery Rd, Box 1580 Dublin, OH 43017 614-792-0334	Bravo Daisy
Gries Seeds	Gries Seed Farms, Inc. 2348 N. Fifth St. Fremont, OH 43420 419-332-5571	Brazen Jack
MCIA	Michigan Crop Improvement Assoc. P.O. Box 21008 Lansing, MI 48909 517-332-3546	Pearl
OFS	Ohio Foundation Seed, Inc. P.O. Box 6 Croton, OH 43013 740-893-2501	AC Essex
Public	Ohio Seed Improvement Assoc. 6150 Avery Rd, Box 477 Dublin, OH 43017 614-889-1136	Cecil Freedom Hopewell Truman
Public	Ohio State University Dept. of Hort. and Crop Sci. 1680 Madison Ave. Wooster, OH 44691 330-263-3944	OH 708
Pioneer Brand	Pioneer, A Dupont Company 210 Westfield Dr Archbold, OH 43502 800-874-8718	25R35 25R47 25R49 25R78 25W41
Vigoro	Royster-Clark, Inc. 717 Robinson Rd. SE Washington C.H., OH 43160 740-869-2181	Tribute V9212 V9412 V9314W
Rupp	Rupp Seeds, Inc. 17919 County Rd. B Wauseon, OH 43567 419-337-1841	RS 919 RS 947
AGRA	Schlessman Seed Co. 11513 SR 250N Milan, OH 44846 419-499-2572	Skyline
Seed Consultants	Seed Consultants P.O. Box 370 Washington C.H., OH 43160 740-333-8544	SC 1325 SC 1335 SC 1343 SC 1352
Steyer	Steyer Seeds 6154 N County Rd. 33 Tiffin, OH 44883 419-992-4570	Bascom Besecker Hartman Jacob Weaver Wiley Ex 401
NK	Syngenta Seeds, Inc. P.O. Box 1240 Winterville, NC 28590 252-746-3004	Coker 9312 Coker 9375 Coker 9474 Coker 9663 B 970051
Thompson Seed	Thompson Seed Farm, Inc. 4920 Defiance Trail Delphos, OH 45833 419-692-1946	TS 3060 TS 8040
Public	University of Arkansas 115 Plant Science Bldg. Fayetteville, AR 72701 479-575-5725	Pat AR 910-9-1
Public	Virginia Polytechnic Inst. & Virginia Crop Improvement Assoc. P.O. Box 338 Warsaw, VA 22572 804-333-3485	Roane Sisson McCormick VA97W-024 VAN98W-342 VA97W-375WS VAN98W-170WS
Wellman	Wellman Seeds, Inc. 23778 Delphos-Jennings Rd. Delphos, OH 45833 800-717-7333	W 115 W 120 W 150 W 9910 W 9940

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U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

Application is required in order to determine if a plant variety protection certificate is to be issued *(7 U.S.C. 2421)*. The information is held confidential until the certificate is issued *(7 U.S.C. 2426)*.

1. NAME OF APPLICANT(S)

Sunbeam Extract Co.

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER

SE 931065-R

3. VARIETY NAME

DAISY

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP, and Country)*

500 Danberry Dr.
Wooster, OH, 44691

5. TELEPHONE *(Include area code)*

330-264-4155

6. FAX *(Include area code)*

330-264-1566

7. PVPO NUMBER 200400294

8. Does the applicant own all rights to the variety? Mark an "X" in the appropriate block. **If no, please explain.** ☒ YES ☐ NO

9. Is the applicant (individual or company) a U.S. national or a U.S. based company? **If no, give name of country.** ☒ YES ☐ NO

10. Is the applicant the original owner? ☒ YES ☐ NO **If no, please answer one of the following:**

a. If the original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. National(s)?
☐ YES ☐ NO **If no, give name of country**

b. If the original rights to variety were owned by a company(ies), is (are) the original owner(s) a U.S. based company?
☐ YES ☐ NO **If no, give name of country**

11. Additional explanation on ownership *(Trace ownership from original breeder to current owner. Use the reverse for extra space if needed)*:

The originating cross, early line selection, evaluation, increase and purification of Daisy were all performed by the applicant breeder or his technical assistants on the premises of the Sunbeam Extract Co., Wooster, OH. Ownership of this cultivar shall remain with the Sunbeam Extract Co.

PLEASE NOTE:

Plant variety protection can only be afforded to the owners (not licensees) who meet the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed the final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definitions.